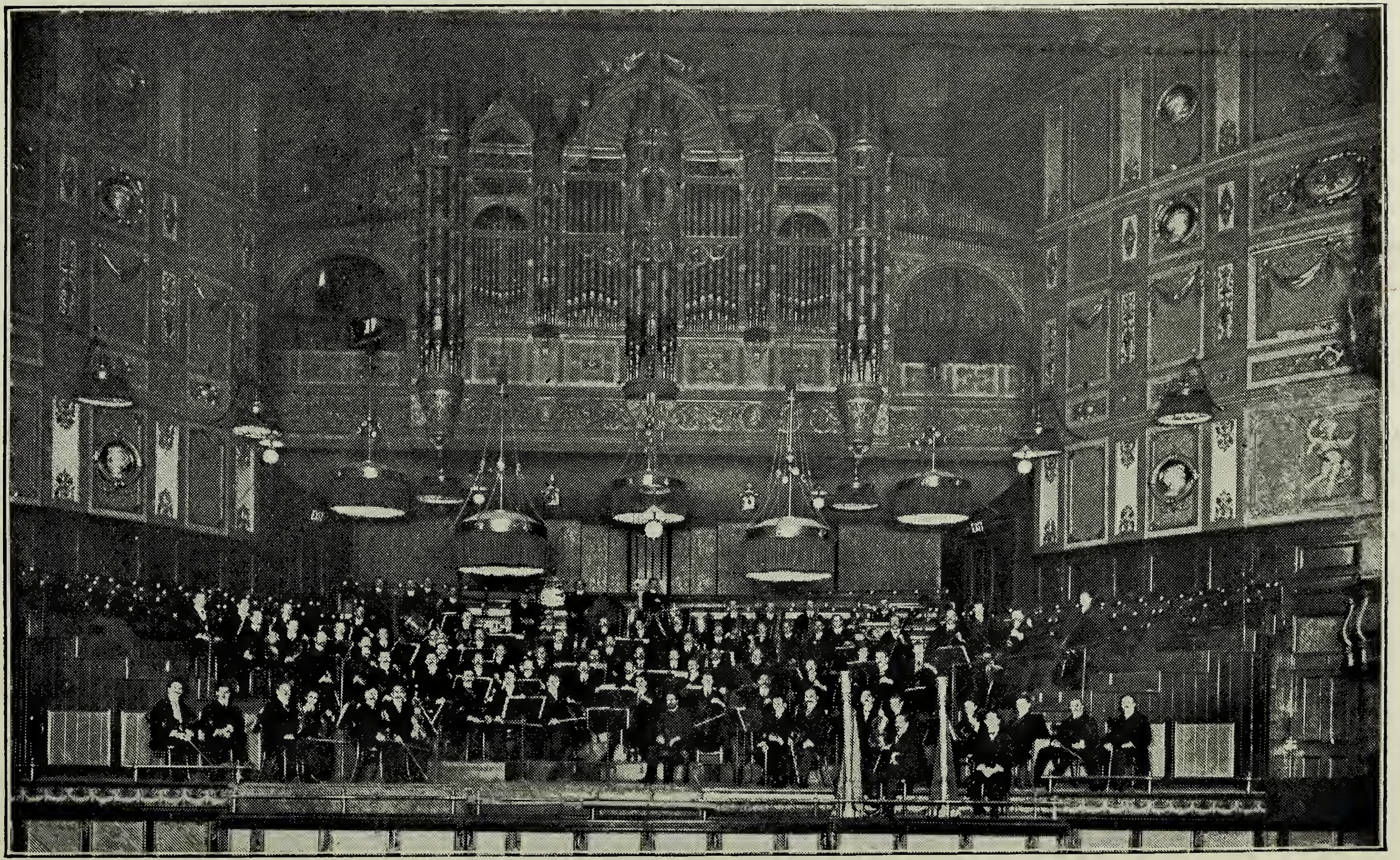


Mr. Henry J. Wood and The Queen's Hall Orchestra.

THE

INSTRUMENTS OF THE MODERN ORCHESTRA & EARLY RECORDS OF THE PRECURSORS OF THE VIOLIN FAMILY

WITH OVER 500 ILLUSTRATIONS AND PLATES

BY

KATHLEEN SCHLESINGER

In Two Volumes—Vol. I.

Vol. I. Modern Orchestral Instruments.

Vol. II. Archæological Records. Researches into the Remote Origin of the Violin Family; a Bibliography of Music and Archæology (English and Foreign) and copious Indices to the two volumes.

LONDON:
WILLIAM REEVES 83 CHARING CROSS ROAD
MCMX

Printed by The New Temple Press, Croydon.

MODERN ORCHESTRAL INSTRUMENTS

(HISTORY, STRUCTURE, CAPABILITIES)

A

PRACTICAL ILLUSTRATED HANDBOOK

BY

KATHLEEN SCHLESINGER

[*Forming Vol. I. of "The Instruments of the Modern Orchestra aud Early Records of the Precursors of the Violin Family."*]

LONDON:
WILLIAM REEVES, 83 CHARING CROSS ROAD
MCMX

PREFACE.

THIS work, obviously characterised by numerous departures from conventional methods, is intended as a simple practical handbook for students and others who wish to be able to identify the instruments in the orchestra, when seeing and hearing them, without studying instrumentation.

Part I deals with the instruments of the modern orchestra on a uniform plan, the necessary information being systematically arranged for each member of it, without unnecessary technicalities, under the headings of *Construction*, *Production of sound*, *Compass*, *Quality of tone*, *Possibilities*, *Origin*, and accompanied in each case by at least one illustration. As the nomenclature of the degrees of pitch in the successive octaves is often a puzzle, a table has been given showing the various methods in use at the present time, including the system suggested by M. Victor Mahillon at the International Musical Congress held in Paris in 1900 and duly adopted.

Part II is an excursion into the domain of archæology in quest of the remote origin of the violin family. It will be noticed that the conclusions at which I have arrived after many years of research differ entirely from those of such authorities as E. J. Payne in Grove's "Dictionary of Music and Musicians" (first edition); Edward Heron Allen in "Violin Making as it Was and Is"; Antoine Vidal in "Les

Instruments à Archet"; Laurent Grillet in "Les Ancêtres du Violon et du Violoncelle"; Fétis in "Antoine Stradivari"; Dr. Julius Rühlmann in "Die Geschichte der Bogeninstrumente," and others, who derive the violin from the Moorish rebab for the reason that, as far as is known at present,* the bow was first used with that instrument in Europe. An equally illogical claim has been made on behalf of the Welsh crwth on the ground that it was mentioned by Venantius Fortunatus in the sixth century, the unwarrantable assumption being that as the Welsh crwth was played with the bow in the eighteenth century, and even in the fourteenth, it must have been a bowed instrument in the sixth century also, which proves to be as great a fallacy as in the case of the rebab (see Appendix, p. 490). As, however, I have discovered in ancient and in mediæval Persia (eighth cent. B.C. to eighth cent. A.D.) the two principal forms of the rebab, afterwards popularised in mediæval Europe under the name of rebec, *both played without the bow* by twanging the strings as in the lute, with which the pear-shaped form was practically identical at that stage, it is manifestly impossible on that score alone to accept the rebab as progenitor of the violin. But there are other and more cogent reasons for seeking elsewhere the origin of the important family of instruments which forms the basis of our modern orchestra. The characteristic in which the violin excelled all other bowed instruments was its tone; the bow, which did not attain perfection at the hands of Tourte until a century and a half after the Cremona masters turned out the first perfect violins, was common to other bowed instru-

* The very earliest instance of the use of the bow with a stringed instrument, which I discovered after the bulk of the letterpress had been printed, occurs on a mural painting representing *Orpheus* in the Necropolis of Baouït (See Bibliography p. 567. under CLÉDAT, pl. xvii.). Unfortunately the reproduction is not clear enough to allow the outline of the instrument to be determined with absolute certainty; the body appears to be pear-shaped.

ments such as rebecs, guitar-fiddles, vielles and viols. The tone was, in the main, the result of certain structural features of the soundchest, *i.e.*, a back and soundboard flat or delicately arched, joined by sides or ribs of equal width, and soundholes placed on each side of the strings; as opposed to the vaulted back to which was glued, without the intermediary of ribs, a flat soundboard, forming the pear- or boat-shaped sound-chest common to instruments of the rebec or lute tribe. These two types of sound-chest were already present respectively in the ancient Greek kithara and in the lyre of Hermes (chelys or testudo) and it is the Greek kithara which, according to my opinion, is the ancestor of the violin. In support of this theory I rely on the authority of a unique MS., the "Utrecht Psalter," in which each psalm is illustrated by a clever drawing in pen and bistre ink. In this MS. the evolution of the instruments of the violin type from the kithara by the addition of a neck is unmistakably shown in the illustrations to certain psalms in which the cithara is mentioned; these instruments have not yet been traced in any European illuminated MSS. There would, therefore, be a gap between the rotta (or cithara in transition) and the guitar, were it not for the drawings of the Utrecht Psalter. A consensus of expert opinions summarised in Chapter VIII. agrees that the originals from which the artist drew his inspiration came from Syria or the Christian East, this particular MS. being executed at Rheims. These opinions are strengthened by my contribution from the domain of musical archæology. I have shown (p. 362 *sqq.*) that the drawings were designed originally to illustrate a Greek or Syriac version of the Psalms, whereas the Gallic version of St. Jerome was used in the Utrecht Psalter.

The guitar-fiddle or bowed guitar, which, in its perfected form, was known in Italy as the *lyra*, was the immediate precursor of the violin. Philological evidence provides the last link and shows that the words *violin* and *guitàr* are derived from

synonymous names for the same instrument, the *cithara* having been also known among the Romans as *fidicula*. The word *guitar* is derived from *githara* or *guitra*, Moorish equivalents for kithara, and *fidicula* was softened in Spanish to *vihuela*, while in French it became *vielle*, in Italian *viol*, and in German and English *fiedel* or *fiddle*. The vihuela was the Spanish name for the Latin guitar derived from the classical kithara, in contradistinction to the Moorish guitar, a pear-shaped instrument with vaulted back akin to rebab and lute. There were three kinds of *vihuela* in use in Spain during the Middle Ages: the *vihuela de mano*, with gut strings plucked by hand, which we call the Spanish guitar; the *vihuela de penna*, or ghittern with wire strings plucked by means of a quill, and the *vihuela de arco* or bowed guitar, the guitar-fiddle of the troubadours and minstrels. Thus the instrument itself, by its name no less than by its structural features, affords definite evidence of its origin. When, in addition, each step in the evolution can be graphically traced, the evidence becomes conclusive, and the derivation of the violin family from the Greek kithara is firmly established, while at the same time I feel justified in rejecting the rebab and crwth from the line of ancestors.

In order to afford students the fullest opportunity of forming their own conclusions*, all the fresh evidence which came to light while the work was in the press, has been introduced, if only in the Index.

The result of the magnificent work done by the various archæological societies in exploring and excavating the centres of the more ancient Oriental civilisations, and in rapidly publishing the reports of their finds, renders it necessary to recon-

---

* This present work is based on some articles which appeared respectively in "Music" (London, 1896-8), and in the "London Musical Courier" (1897 8).

sider the history of European music and musical instruments. The origin of all musical instruments with the exception of the *organistrum* and perhaps the *tromba-marina* may be traced to the East, although the developments and improvements in construction are due to European enterprise and skill. Even the harmonium, in which the principle of the Chinese *cheng* has been utilised, and the fine brass instruments with valves which form the bass of the modern orchestra and military band cannot be claimed entirely as products of our Western civilisation.

The copious bibliography which will be found at the end of the book has been compiled with the hope that it may prove suggestive to those engaged in original archæological research. I have included in it the titles of certain works not containing illustrations of musical instruments, where this deficiency is counterbalanced by valuable references. Some of the books on my list have been included as containing matter likely to be suggestive, and in other cases I have been unable to utilize the data they contained. The system of distinction by asterisks solely regards the merits or demerits of the work in question with respect to its value to my subject.

Finally, I welcome this opportunity of acknowledging my indebtedness to the late A. J. Hipkins, who, by his advice, just criticism and sympathy, no less than by the constant interest he showed in the details of my work, encouraged me to complete my work on its first appearance. To many others also, I owe hearty thanks for their generous help, advice and experience, especially to Messrs. Victor Mahillon, Arthur Hill, R. J. White, H. Grice, T. C. Edwards, A. C. White; and also to Miss Bryant and Miss Mabel Goschen (Mrs. Gerard Cobb). For gifts or loans of photographs or drawings for the purposes of illustration I am greatly indebted to the late Sir Thomas Brooke, to Professors Flinders Petrie and John Garstang, Messrs. G. F. Barwick, O. M. Dalton, A. Hughes-Hughes,

Héron de Villefosse (Paris), Michel Deprez (Paris), Gabriel Millet (Paris), Ernest Leroux (Paris), Paul Dujardin (Paris), to the Rev. F. W. Galpin, Rev. Dr. Sinker (Trin. Coll., Cambridge) and the Rev. Père Delattre (Carthage), to Dr. Füh (St. Gallen).

My hearty thanks are finally due for very substantial assistance in compiling the bibliography to Mrs. E. J. Clark and Miss Dorothy Fraser, and to the same ladies for their very valuable collaboration in drawing up the Index to Illustrations and the Index to the Letterpress respectively.

Students who wish to go deeper into the subject are invited to consult the separate articles on musical instruments, which are to appear in the eleventh edition of the "Encyclopædia Britannica," and also the Appendix to the third part of the Catalogue of MS. Music in the British Museum. "Instrumental Music and Works on Music," by Augustus Hughes-Hughes, 1909, the latter of which contains a most valuable alphabetical list with brief descriptions of representations of typical musical instruments found in the illuminated MSS. in the British Museum.

KATHLEEN SCHLESINGER.

LONDON, 1910.

CONTENTS.

VOL. I.

MODERN ORCHESTRAL INSTRUMENTS.

SECTION I.

SECTION II. STRINGED INSTRUMENTS.

SECTION III. INSTRUMENTS OF PERCUSSION.

APPENDIX.

VOL. II.

THE PRECURSORS OF THE VIOLIN FAMILY.

APPENDIX.

BIBLIOGRAPHY.

Section A.

Section B.

Section C. Archæology and Antiquities.

SECTION D. THE EAST.

SECTION E. FAC-SIMILES OF ILLUMINATED MSS.

SECTION F.

SECTION G.

LIST OF ACKNOWLEDGMENTS*

for the loan of photographs, electrotypes or drawings for illustrations.

Frontispiece. Mr. Henry J. Wood and the Queen's Hall Orchestra. *Through the courtesy of Mr. Robert Newman.*

Concert Flute, Boehm, pages 8-9. *Messrs. Hawkes & Son.*

Cylinder Flute with parabolic head joint, Boehm System, Rockstro's Model, plate. *Messrs. Rudall Carte & Co.*

Piccolo, pages 8-9. *Messrs. Hawkes & Son.*

The Oboe, pages 8-9. *Messrs. Hawkes & Son.*

Oboe, Rudall Carte's with 17 keys, plate. *Messrs. Rudall Carte & Co.*

Cor Anglais, page 15. *Messrs. Joseph Wallis & Son.*

Bassoon, Improved Savary Model, back and front, page 18. *Messrs. Rudall Carte & Co.*

Bassoon, page 20. *Messrs. Hawkes & Son.*

Double Bassoon, page 26. *Messrs. Besson & Co.*

Double Basoon, page 26. *Herr W. Heckel (Biebrich-am-Rhein).*

Clinton Clarinet, page 31. *Messrs. Robert Cocks & Co.*

Carte Patent Clarinet, plate. *Messrs. Rudall Carte & Co.*

Clarinet, Albert Model, plate. *Messrs. Besson & Co.*

Basset Horn, page 37. *From a photograph presented by M. Victor Mahillon (Brussels).*

Bass Clarinet, back view, page 37. *Messrs. Rudall Carte & Co.*

Bass Clarinet, front view, plate. *Messrs. Rudall Carte & Co.*

Bass Clarinet, page 39. *Messrs. Hawkes & Son.*

Pedal Clarinet, page 42. *Messrs. Besson & Co.*

Saxophone, pages 46-7. *Messrs. Besson & Co.*

French Horn, Raoux Model, 3 pistons, page 48. *Messrs. Hawkes & Son.*

French Horn, Raoux Model, Kneller Hall Pattern, page 49. *Messrs. Rudall Carte & Co.*

Tenor Horn, page 54. *Messrs. Rudall Carte & Co.*

Cornophone, page 56. *Messrs Besson & Co.*

* See Index to Illustrations at the end of Vol. II.

Five-valve Euphonium, page 59. *Messrs. Besson & Co.*
Cup-shaped Mouthpiece, page 60. *Messrs. Besson & Co.*
Short Action Bass, page 61. *Messrs. Rudall Carte & Co.*
Bombardon, 4 valve, or Bass Tuba, page 62. *Messrs. Hawkes & Son.*
B Flat Bass Contrabass Tuba, page 64. *Messrs. Hawkes & Son.*
Helicon or Contrabass, pages 66-7. *Messrs. Hawkes & Son.*
Helicon or Contrabass (in use), page 69. *Messrs. Boosey & Co.*
Bass Tuba in F, page 72. *Messrs. Besson & Co.*
Valve Trombone, page 77. *Messrs. Hawkes & Son.*
Tenor Trombone, pages 78-9. *Messrs. Hawkes & Son.*
Contrabass Trombone, page 81. *Messrs. Boosey & Co.*
Double-slide Trombone, page 82. *Messrs. Rudall Carte & Co.*
Valve Trumpet, page 86. *Messrs. Hawkes & Son.*
Bach Trumpet. *Messrs. Besson & Co.*
Slide Trumpet, page 86. *Messrs. Köhler & Co.*
Bass Trumpet, page 87. *Messrs. Besson & Co.*
Doublophone, page 92. *Messrs. Besson & Co.*
Cornet, page 94. *Messrs. Besson & Co.*
Victory Cornet, page 96. *Messrs. Besson & Co.*
Cornet with Enharmonic Valves, plate. *Messrs. Besson & Co.*
Cornet with Conical Valves, Klussmann's Patent, plate. *Messrs. Rudall Carte & Co.*
"Emperor" Strad Violin, page 100. *Messrs. Hart & Son.*
Viola, page 111. *Messrs. Hart & Son.*
Violoncello, page 114. *Messrs. Hart & Son.*
Double Bass with Bow, 3 Strings, page 117. *Messrs. Metzler & Co.*
Pianoforte, page 122. *Messrs. Erard & Son.*
Underside of Soundboard, page 124. *Messrs. Broadwood & Sons.*
Stringing and Framing, page 125. *Messrs. Broadwood & Sons.*
Stringing and Framing, page 127. *Messrs. Steinway & Co.*
Bass End of Hammers and Checks, page 128. *Messrs. Broadwood & Sons.*
Treble End with Levers, page 128. *Messrs. Broadwood & Sons.*
One Note of the Action of a Grand Pianoforte, Herz-Erard-Broadwood, page 130. *Messrs. Broadwood & Sons.*
Grand Pianoforte, page 131. *Messrs. C. Bechstein & Co.*
Double Action Harp, page 141. *Messrs. Erard & Sons.*
Chromatic Harp, page 151. *Messrs. Pleyel, Wolff & Co.*
Kettledrum with Instantaneous System of Tuning, page 163. *Messrs. G. Potter & Co. (Aldershot).*
Diagrams A and B for Kettledrum with Instantaneous System of Tuning, page 164. *Messrs. G. Potter & Co. (Aldershot).*
Orchestral Drum, page 165. *Messrs. Besson & Co.*
Glockenspiel, page 168. *Messrs. Boosey & Co.*
Parsifal Bell Instrument, page 173. *From a photograph presented by the maker, Herr Ludwig Schweisgut, of Carlsruhe.*

Peal of Hemispherical Bells, page 176. *Obtained through the courtesy of the owners, Messrs. Novello, Ewer & Co.*

Bass Drum, page 177. *Messrs. Boosey & Co.*

Side Drum, Orchestral, page 179. *Messrs. G. Potter & Co. (Aldershot).*

Triangle, page 180. *Messrs. G. Potter & Co. (Aldershot).*

Cymbals, page 181. *Messrs. G. Potter & Co. (Aldershot).*

Clarina, page 189. *Herr W. Heckel (Biebrich-am-Rhein).*

Barless Steel Frame Grand, page 191. *Messrs. Broadwood & Sons.*

Georgi Flute, page 191. *Messrs. Joseph Wallis & Son.*

Stelzner Violin Family, pages 196, 198-9. *By courtesy of the late Dr. Stelzner.*

Violin Tailpiece, page 266. *Messrs. Beare & Son.*

Nut of Violin Bow, page 270. *Messrs. Beare & Son.*

Nut of Vuillaume Bow, page 271. *Messrs. Beare & Son.*

Zither Thumb-ring, page 275. *Messrs. Beare & Son.*

LIST OF ILLUSTRATIONS

See Index of Illustrations at end of Vol. II.

INTRODUCTION

A Sketch of the Rise of the Modern Orchestra.

ALTHOUGH our modern orchestra owes its composition and development directly to the musical drama which sprang into being in Italy at the end of the sixteenth century, calling into requisition most of the instruments known at the time, the evolution of the orchestra really began with the first grouping together of simple reed pipes, flutes, primitive harps and drums, in which the three orders of musical instruments, percussion, wind and strings, were duly represented.

In sketching the history of the orchestra we are not only concerned with its physical constitution, but also with the use made of it as a complete body (1) to accompany the voice, the dance or any other rhythmical action; (2) to characterise and comment subjectively upon what the voice has to express; (3) to express more or less indefinite emotions, thoughts and musical ideas without the aid of words.

Evidences of the first and most popular of these functions of the orchestra abound in every civilisation from the earliest historic times. Bands composed of such stringed and wind instruments as were known at the time were called into requisition for religious rites and ceremonies, military displays

Most of my notes were made a long time ago in pencil. I believe that the [illegible] [illegible] of the "Cornet" is owing to the "conical" form

and festivals, banquets and obsequies. The orchestra in some form or other has, in fact, from the earliest times formed an integral part of the life of the people.

The second and more subjective function of the orchestra marks a great advance and presupposes the existence of some form of drama with music, the most perfect form of which was the classical Greek drama, more closely allied to the modern music drama of Wagner than to the literary drama. Although the musical ideals of classic Greece were diametrically opposed to the orchestra, as understood at the present day, yet it was the Greeks who conceived the idea of the true function of the orchestra in musical drama.

The third function of the orchestra was the performance of absolute music which reached its highest development in the symphonic poems of the great tone-poets at the end of the eighteenth century. Absolute music was, during the best period of classic Greece, considered a sign of decadence.

The Greek tragic writers strove to make their music represent the different phases of action, and the feelings of the characters; we have reason to believe that they succeeded, but unfortunately, none of the music of the tragedies is extant.

Egypt.—A fresco to be seen at the British Museum, copied from a mural painting in Egypt, and dating from about 1700 to 1300, B.C., represents a band at a gentleman's house, celebrating the festival of the god Ptah; women musicians are included in the band; one is playing a double flute and three maidens are marking the rhythm by clapping their hands. From other frescoes we find that Egyptian bands consisted of many instruments, such as harps, guitars, lyres, lutes, flutes, single and double pipes or shawms, trumpets, cymbals, drums, etc. Harmony, as we understand it, was unknown to the Egyptians, but they used the different instruments in octaves, with perhaps a drone or ground bass, to vary the tone-colour and volume of sound. It is evident from the innumerable

traces remaining to us that music was highly esteemed as an art in Egypt at the time when civilisation had reached its apogee; fragments of treatises on papyrus, relating to the tonal art, have been discovered.

India.—Far more definite and accurate are the evidences of the high degree of cultivation attained in this art among the Hindoos and Chinese; of the latter, however, nothing need be said, as their arts had but little influence on those of Europe. Hindoo music, on the contrary, had certain affinities with that of the Greeks. Hindoo treatises on music of great antiquity, in prose and verse, are extant; their instruments were many and comparatively perfect, the stringed predominating, a sure sign of the high development of the art. Music was closely connected with their religion and its many rites. We know, however, that it had at least one secular use in the drama, said to have been invented in prehistoric times by their god Bharata. The most ancient specimen is a drama treating of the history of the god Krishna, which is still extant, and contains songs and choruses. At a much later period (56 B.C.) the great drama of Sakuntala was composed by Kalidasa, containing songs with instrumental accompaniment.

Greece.—Among the Greeks, music had a high and noble significance; it was studied from a philosophical point of view, and aimed at appealing to the mind and soul, rather than to the senses. It was thought that Pythagoras had invented the diatonic and chromatic systems of scales, but a double reed-pipe found in 1890 by Prof. Flinders Petrie in the mummy-case of the Lady Maket, dating from at least 1100 B.C., when played, gives both a diatonic and a chromatic scale, which leads us to think that Pythagoras, during the eighteen years he spent in Egypt, may have learnt these systems from the Egyptian priests and introduced them into his native country.

Greek Drama.—The earliest music in Greece was used in

religious rites and military evolutions, but with the rise of the drama came the use of the orchestra, as we understand it, in the theatre or concert. The word orchestra is derived from the Greek word ὀρχέομαι, to dance. It was applied to the space between the auditorium and the proscenium or stage, in which were stationed the chorus and instrumentalists; the latter consisted chiefly of players on the *aulos** and the kithara or phorminx. The chorus danced at intervals round the Thymele or altar to the god Dionysus, singing an explanation of what was going on on the stage in unison, with instruments playing in unison and in octaves with the voices or perhaps even with a harmonic basis of instrumental music. Unfortunately, none of the music is extant. The primary function of the orchestra in classic Greece, therefore, was not to accompany, but to make clear by music the action of the drama, which was thus the prototype of the modern musical drama; Wagner, therefore, did not revolutionize, but revived the old classical traditions.

The Tragedy.—The Greek drama comprised: (1). Tragedy. (2). Comedy. It is with the former that we have most to do. Tragedies (derived from τράγος, a goat, and ᾠδή, a song), were so called on account of the goats sacrificed to the god Dionysus, and were gradually evolved from the fusion of (1), the Dithyramb—a hymn in honour of that god, usually accompanied by *auloi* and kitharas and (2), Rhapsodies—epic poems chanted by wandering rhapsodes to instrumental accompaniment.

To Thespis, 535 B.C., is attributed the invention of the tragedy. He was the first to introduce an actor to vary the monotony of the dithyramb; this actor stood on a table—the embryo stage—and addressed his chanting speech to the coryphœus or chorus. Aeschylus (525-456 B.C.) added a second

* The reed pipe, either oboe or clarinet.

actor, Sophocles (495-405 B.C.), a third. These writers were also musicians, and composed the music for their own dramas. Euripides, however, was no musician, and we hear that he had to engage a professional to compose the music for his dramas. The orchestra did not increase in numbers until the days of the Roman drama.

Roman Drama.—The Roman drama was founded on the Greek, with the addition of native forms. The first regular Roman drama performed in a theatre was in 240 B.C. The main differences between the Greek and Roman dramas are: Firstly, that in the latter more voices and instruments were used, the trumpet, buccina and lituus being added. Secondly, that the chorus was transposed to the stage and occasionally took part in the acting. To the fondness of the Romans for wind instruments we owe nearly the whole of the wind contingent of the modern orchestra, each member of which can claim an ancestor among the instruments of the Roman Empire.

Downfall of the Drama.—Dance and song gradually ceased to form part of the Tragedy; this was the beginning of the end; the downfall came in the middle of the fourth century A.D. Morality being at a very low ebb on the Roman stage, the Church condemned the theatre, and the drama died out completely till the fifteenth century.

Monasteries and Churches.—In the interim, the fostering of the art of music was left entirely to the monasteries, as far as vocal music was concerned; instrumental music was banished from the early Church ritual, being too much associated with the ribald, sensual music of the Roman theatre, and it would have fallen into disuse but for the musicians, who, after the closing of the theatre by order of the Church, wandered through the country playing and singing at festivals, appearing and disappearing without leaving a clue to their whereabouts.

England.—No trace of harmony has as yet been discovered in Europe before the tenth century; a number of instruments still either playing in unison, to increase the volume of sound, or to give colour by varying the use of the instruments according to the effects required. From some allusions in the old chronicles of England it is thought that Harmony was known and practised in some parts of our land, notably in Northumbria, before the days of Hucbald. There were many schools of music in England at the time of Alfred the Great, notably at Oxford; and we find that he conferred the title of Professor of Music upon a teacher of theory in 886.

First Steps in Harmony.—The first steps in Harmony were made in the beginning of the tenth century, when Hucbald, a Flemish monk, introduced into the Church ritual four-part songs or chants, in which the voices or parts moved in fourths, fifths and octaves, and very harsh and discordant they sounded. This first step in the evolution of harmony is important, as although it only concerned the voice at first, the development of instrumental music was impossible without it, and from this date, instruments were no longer used merely to accompany the voice, but followed closely the development of harmony which may thus be regarded as directly responsible for the invention of certain instruments and for improvements in the construction of others. This is not the generally accepted theory, but an examination of the construction of the organistrum taken in conjunction with the origin of its name leaves no room for doubt on this point. The organistrum which appears on the Romanesque sculptures and in the miniatures of the eleventh and twelfth centuries, owes its existence directly to Hucbald's *organum.* The organistrum had three strings tuned to the octaves of C with an intermediate F or G, and all sounded at once by the friction of a wheel set in motion by a crank. By means of keys or movable frets fixed along the neck and taking effect on all three strings at once,

the succession of octaves and fifth known as the *organum* was produced. No other style of music was obtainable from the organistrum and it stands as a unique instance on record of an instrument invented for a special form of music and incapable of producing any other. When the organum no longer found favour and had been replaced by polyphony on a ground bass, the organistrum was modified to produce the new style of harmony and survived as the *symphonia* or *hurdy-gurdy*. By using a flat bridge, the same effect may have been obtained on bowed instruments with three strings.

Example of the Organum, ascribed to Hucbald by Coussemaker.

Guido of Arezzo, in the eleventh century, introduced diaphony or two-part song, in which the *canto firmus* was taken by the second voice, the first having various figures and embellishments; this was the first step in counterpoint.

Polyphony.—To the eleventh century, also, belongs the rise of part-writing, in which it was endeavoured to compose songs in several parts, all equally melodious, which would blend harmoniously. This was the beginning of Polyphony, its two best models being the canon and fugue, which, however, are of a later date. There is reason to think that these part-songs formed part of the repertoire of instrumentalists from an early date, although no independent instrumental music was written before the fifteenth century. As an immediate result of the introduction of polyphony, such instruments as lutes, vielles, flaiols or flutes à bec, shawms, cromornes, cornets, hunting horns and bagpipes were made in

different sizes corresponding approximately to the pitch of the human voices, treble, alto, tenor, bass. This forms a very important step in the evolution of the orchestra.

Counterpoint.—In Paris, in the twelfth century, diaphony was developed, by the efforts of a Dutchman, into counterpoint, and from there it spread, first to the Netherlands, whence masters proceeded to Italy, establishing schools to which came Germans, who, returning to their own country, carried with them their knowledge of counterpoint—which culminated centuries later in the hands of the great Bach. The growth of the Opera in Italy and Germany caused the contrapuntal style to die out of secular music to a great extent—at first even the music of the opera was contrapuntal. To England belongs the honour of the earliest and finest piece of polyphonic writing in six parts in existence; this is "Sumer is icumen in," a well-known example composed by some Northumbrian monk, about 1226 to 1236. It is a perfect canon in six parts, with a double pedal or ground bass, and it contains very few faults in harmony, even when judged by the light of our greater knowledge.

Town Bands.—We must now return to instrumental music and see how the first regular orchestras were formed in towns. The returning crusaders brought many new instruments with them from the East, giving a fresh impetus to instrumental music. The minstrels and bards in England, Scotland and Wales; the troubadours of Provence; the Trouvères of Normandy, and the Minnesingers of Germany, wandered from castle to town, sang their love ditties or their heroic songs to the fiddle or harp, for the love of the art or of an adventurous life. They often brought in their train mountebanks, pipers or jongleurs, who were actors and musicians of a professional nature, and who played accompaniments on divers instruments to the minstrels' songs, with interludes of acting, mimicry, juggling, etc. These pipers, when tired of their roving life,

often settled down in towns and formed guilds or town bands, especially in Germany and the Netherlands. To the South-East of France belongs the honour of being the pioneer to the romantic song-movement. There are frescoes and pictures extant, depicting some of these mediæval bands, as, for instance, Pl. XIV. in Vol. II.; a bas-relief of the eleventh century, from a church in Normandy, shows an early orchestra, composed of two rottas or crwths, an organistrum, a syrinx, a psaltery, two harps and instruments of percussion. We know, from the Manesse manuscripts at Paris, that Frauenlob, the last of the Minnesingers, who flourished in the thirteenth century, was also an instrumentalist; he is shown in an illustration, seated on a high platform, conducting a little band of stringed and wind instruments; all these instrumentalists are at rest except the chief musician, who is evidently a great master, performing on a four-stringed fiddle; all are listening with rapt attention, and he is standing on a special carpet just unrolled by two boys. Some sort of conducting was evidently practised, even in those days, for Frauenlob is depicted with a long bâton in the left hand, and his right held up, as though he were beating time with it.* In a Spanish MS. of the thirteenth century, in the Escorial Library, is a series of miniatures representing fifty-one musicians of the period, playing various instruments. Albrecht Dürer has left us many pictures on musical subjects—notably one of the Nuremberg town band, in the town hall of that city, consisting chiefly of wind instruments; the two slide trombones resemble the modern ones as nearly as possible.

Mysteries, Miracle Plays, etc.—The mysteries and miracle plays were sacred dramas performed at first by monks in churches, and when afterwards, with an admixture of secular

* Reproduced in Naumann's "History of Music."

element, they developed into Moralities, Interludes, and, later still, into Plays, Dramas and Masques, they were performed in the streets, in the courtyards of inns, in tents, and finally in the theatres, the first in England being that built by Burbage in Shoreditch (1576-7) for Shakespeare's plays. All these plays were interspersed with short preludes of descriptive music. Appropriate instruments were used to attune the mind of the spectator to receive certain impressions. These early dramatic productions were preparing the way for the Opera during the thirteenth, fourteenth and fifteenth centuries. In England the transition from the masques, set to music by Lawes and Purcell, seemed but a step, and took place quite naturally and easily during the lifetime of Purcell, but the idea and name of Opera were borrowed from Italy. In France the masques were called Ballets, and continued side by side with the Opera.

Revival of the Drama.—It is to Florence that the honour is due, not only for the renaissance in painting, but also in music, at the end of the sixteenth century. In striving to bring back the glories of the old Greek tragedy, incomplete without its music which was lost, a small number of Tuscan art-enthusiasts came upon the idea of the modern Opera at a time when the rest of Italy, Germany and France were devoting their musical talent to the composition of elaborate church music. One of the enthusiasts, Galilei, perceived that the expressive solo song was essential to the drama, and he composed, in 1580, a dramatic scena or cantata called "Il Conte Ugolino," for one voice, with accompaniment on the viol. This was a complete success, and was followed in 1600 by what are practically the first operas, "Daphne" and "Eurydice," by Jacopo Peri. In the latter we find the idea of the dramatic recitative on an instrumental bass. Peri's orchestra consisted of a cembalo, a chitarrone, a theorbo and a large lyra or guitar-fiddle. Larger orchestras than this were usual in Italy, for in 1565 Intermezzi,

little entr'acte scenes of instrumental music, song, recitative and dialogue introduced between the acts of the spoken Drama, and also the "Symphoniæ Sacræ" of the two Gabrieli's, were scored for no less than twenty-one different kinds of instruments. It seemed as if Italy had been waiting for the Opera, for the latter found favour at once, and Peri's impetus produced, in an incredibly short time, in all parts of Italy, writers of operas.

Our Orchestra.—We owe the composition of our orchestra to Monteverde, of Cremona, who was the first to see that the best balance is obtained by having a preponderance of stringed instruments. His orchestra in 1608, when his opera "Orfeo" was produced, consisted of two gravi cembali, two violins, ten viols, one double harp, two chitarroni, two *positives*, one regal, three viols da gamba and two double-basses, four trombones, two cornets, one small octave flute, one one soprano trumpet and three muted trumpets: in all twenty strings, against eleven wind instruments and three keyed. Monteverde anticipated Wagner's principle that the exigencies of the action and the requirements of the texts should rule the musical design of the lyrical drama, and the instrumental portions should, quite as much as those assigned to voices, illustrate the progress of the scene and the significance of words. The latter is exemplified by Monteverde's use of particular instruments for the music of particular persons, so as to characterise every member individually. In his Opera of "Tancredi e Clorinda" Monteverde depicts in the orchestra the feelings which the voice is not able to express alone. Making a great advance in the use of bowed instruments, he invented the tremolo on strings to thrill the audience when Tancredi mortally wounds Clorinda by mistake. He also invented the pizzicato to imitate the clashing and drawing of swords.

The Violins of Cremona.—The demand for more perfect stringed instruments created by Monteverde's instrumental

basis to his operas was readily supplied from the famed workshops of Cremona, by the Amati, the Stradivari and the Guarneri; who were then producing instruments so perfect that in three hundred years they have never been surpassed. The honour of making the very first violins, however, is claimed by some writers for one Tieffenbrücker, a viol-maker of the Tyrol, and by others with more reason for Gasparo da Salo. There is no doubt that the viols with sloping shoulders owe their origin to the German minnesinger fiddles, which differed from the guitar-fiddle precisely in that important structural feature, the shoulder. The guitar-fiddle developed in Italy to the highest perfection, being known there as the *lyra*, from which the violin was immediately descended. The followers of Monteverde had certain practices which have re-appeared in this century, *i.e.*, those of concealing the orchestra, and of writing an explanatory preface to their stage works.

The Opera was at first an aristocratic luxury, performed privately at the courts of princes and noblemen, but in the seventeenth century, performances were given in the theatres. I will not attempt to trace the opera in any other country; suffice it to say that it spread rapidly from Italy to all other musical lands, where its fortunes varied according to the character of its race and its musical genius.

Instrumental Church Music.—For centuries the Church had been content with rich polyphonic choruses in many parts, with the accompaniment of organ, viols, trumpets, trombones or cornets, or with viols alone; but the love of colour of the Venetian masters in music, no less than in painting, led them to introduce into Church music two, or sometimes even three, complete choirs, with rich (for that time) orchestral accompaniment. The founder of the Venetian school was Willaert, a Dutchman, who had studied in Paris, and his pupils, the two Gabriellis (1510 to 1613), wrote innumerable "Symphoniæ Sacræ" for voices and instruments.

Growth of Instrumental Music.—With the musical Drama grew the individualism of the various instruments. The violin family in particular received great attention. The beautiful instruments turned out by the Cremona makers encouraged virtuosi to try their skill to the utmost, and composers to write solos to show off the capabilities of the instruments. The first to write a solo for the violin was Biagio Marini, who died at Padua in 1660. Till then, if an executant on a viol wished to play alone, he chose the treble part of a madrigal or part song. Marini had a host of followers who imitated him. We find the variation form invented by Vitali, and the concerto (in its elementary form) by Corelli, 1660-1708. During the second half of the seventeenth century the Overture was also invented by Lully, a Frenchman brought up in Florence, who introduced the Opera into France from Italy as well as numerous improvements in the orchestra. He was the first to use the kettle-drum in it.

In Monteverde's days only a little prelude of eight or nine bars repeated preceded the Opera. "Lully's Overture," or the French, 1672-86, was composed of three movements, the first majestic, the second Allegro, the third a march or dance tune, and had no connection with the action of the Opera to which it was prefixed. The Scarlatti, or Italian Overture, consisted of an Allegro, a short Adagio, and a second quick movement or a repetition of the first. Handel wrote his overtures on Lully's form, much elaborated. The dance tune which so often formed the last movement of the overture was the minuet, pavane or some graceful, slow dance, and the idea does not seem to us so singular when we remember that the Ballet grew up side by side with the Opera in Paris, and that many operas contained dances. Gluck was the first to write overtures, analogous in style and sentiment to the Opera which followed, but even he did not include in his overture themes from the opera; this improvement was carried out by Mozart in his

"Don Giovanni." Beethoven attained to the highest pinacle of dramatic art and of elevation of style in his overtures, notably, that to "Fidelio," "Leonora" No. 3. Weber invested the overture with the richest local colour and romanticism, and Wagner with the grandest and most splendid orchestration. At the end of the sixteenth century, the word Sonata began to be used by the two Gabrielis in Venice, for organ compositions; it seems to have been a portion of a larger work of which the rest was vocal. The Sonata was brief, solemn, slow, pouring forth volumes of sound. The word was similarly applied in Germany (probably through Heinrich Schütz, a pupil of Gabrieli's, who composed the first German Opera in 1627 to the text of "Daphne"). In the seventeenth century, when instrumental and solo music began to develop, the sonata assumed a certain definite form under Bibers and Corelli, who wrote for the violin. It consisted then of four or five movements more or less like a "Suite de pieces," and kept this form under Domenico Scarlatti and Bach. Kuhnau was the first to write sonatas for the harpsichord. Haydn by introducing two contrasted chief themes, in properly related keys, began the evolution of the sonata-form. Mozart followed in his footsteps. Beethoven, however, it was, who gave us the perfect sonata as it now stands with three or four movements, of which the first, the most important, is called sonata-form or first movement. The Symphony, a sonata for orchestra, the chamber quartet and trio, etc., all are built on this grand plan of the Sonata. The first to introduce the symphony was Haydn; Mozart further improved it, and Beethoven, with bold regenerating touch gave it what it required to make it perfect.

The Modern Orchestra.—Our orchestra practically began to assume a definite shape, and to have an independent existence, as well as music and laws of its own, with the revival of the drama in the seventeenth century. As the instruments were

improved, new ones introduced, and old ones abandoned, instrumentation became a new and favourite study in Italy. Musicians began to find out the capabilities of various families of instruments, their value in special effects, the kind of music most suitable to each, and also to feel their way about the immense field of resources opened out to them. The possibility of using some of the instruments as solo-instruments, by encouraging virtuosi to acquire great skill, raised the standard of excellence of the whole orchestra. Monteverde had felt the need of the preponderance of stringed instruments in the orchestra, and his successors, who had the perfected Cremona models at their disposal, soon established a properly-balanced quartet of strings, and ejected all stringed instruments not played with the bow, except the harp. The proper understanding of the compass and capabilities of wind instruments was of later date. They were chiefly used to double some part of the string quartet until Mozart's time.

The effort of reviving the Drama and of creating instrumental music seems to have exhausted Italy, for during the eighteenth century, the orchestra occupied a very secondary position in Italian music. The evolution and perfecting of the orchestra was continued chiefly in Germany during that period.

Most German princes and nobles had private orchestras called Kapelles, and their leader was the Kapellmeister. These princes always endeavoured to secure the services of the very best musicians. Though Bach was kapellmeister at several courts in Germany, his influence was not fully felt till long after his death. All the genius that succeeded him acknowledged that his music was the firm basis from which all their efforts started. So far as the instruments are concerned, our orchestra does not differ materially from Bach's. It is in the treatment of the individual instruments and in the fact that in Bach's time they were scarcely ever all used together (some

being reserved for special effects), that the difference lies; in fact, tone-colour was not understood then as it is now. In the modern orchestra the instruments are treated more in groups. We have complete quartets of strings, oboes, clarinets, horns, tubas and trombones, all richly scored for. Haydn may be called the father of the modern orchestra. He was the first to treat it independently as a great power opposed to the solo and chorus. He greatly increased the resources of instrumental music by treating the instruments in groups to produce certain effects. Haydn learnt much from Mozart about the use of instruments, the clarinet particularly, and all the characteristics mentioned above became noticeable after his intercourse with Mozart, whose tone-painting was, however, never so rich as Haydn's. Haydn was, above all, human, and depicted in his music the life he saw around him, and nature as it impressed him, whereas, of his predecessors, Bach was, above all, a Lutheran. Handel's subjects were mainly concerned with the Old Testament heroes, Gluck's with those of classical Greece. The latter, the prototype of Wagner, led the way by his reforms. Haydn and Mozart followed, helping on the evolution of form, which reached its culminating point under Beethoven, who did much to individualise the instruments, writing beautiful solo passages for them; even the double basses have independent and wonderful phrases assigned to them. Weber modelled his orchestration on Beethoven's, but his originality asserted itself, and struck out into new paths. He was the first to appreciate to the full the value of the clarinets and horns. Weber is eminently dramatic; his influence is to be felt in the music of Meyerbeer and Wagner. Schubert was the first to bring out the full beauty of the wood wind family by scoring for its members solos and duets. Brahms and Dvorák have followed him in this innovation.

Although Schumann's fame rests less on his orchestral than on his piano and chamber music, he has the merit of having

introduced valved horns and trumpets into the orchestra, thus revolutionising instrumentation for the brass wind. Of Wagner's musical theories, it is not necessary to say much, they are well known in England now. His claim, however, to be one of the very first masters of orchestration is acknowledged by all. He is besides a consummate master in the art of attuning the audience to what it is called upon to witness.

The art of conducting an orchestra, upon which so much depends now-a-days, is of comparatively recent date in England, having been practised only from the beginning of last century. Concerts and operas used to be directed by a musician seated at the piano (and earlier still at the harpsichord or spinet) who followed from the score, occasionally joining in on the piano, while the first violin or leader gave the *tempi*, or beat time, with his bow, if the instrumentalists faltered or failed to keep strictly together. In 1820, at a Philharmonic concert, Spohr electrified his audience by forsaking his piano and standing with his face towards the orchestra and his score in front of him, on a desk, beating time with his bâton from beginning to end of the concert. This was found so successful a method that it was at once adopted in England. The final seal was placed upon our modern orchestra by the invention in 1815 of the piston or valve system for brass wind instruments by Stölzel and Blümel, both natives of Silesia. Ingenuity had been at work in all directions to provide a new and satisfactory bass for the wind contingent. The ophicleide or keyed serpent; and the various other allied keyed brass instruments comprised under the general but misleading term of "bass-horns" were tolerated *faute de mieux*. The results of the invention were instantaneous and far-reaching and instrument makers of all countries vied with each other in making use of this invaluable contrivance and in bringing it to mechanical perfection. Before long the orchestra was enriched

by the family of brass valve instruments of large calibre known as tubas or bombardons and euphoniums, having throughout their compass a chromatic scale and a full sonorous tone of great beauty and immense power, and providing the long desired bass for the orchestra and military band.

THE HARMONIC SERIES.

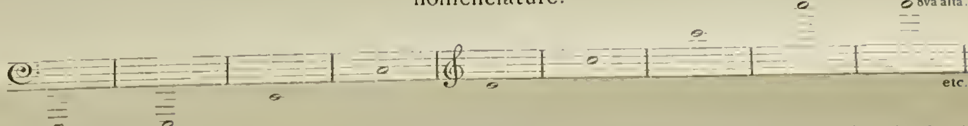
Fundamental Note. Tonic.	1	1
	2	2
Dominant. Perfect Fifth.	3	3
	4	4 = (2 × 2)*
Mediant. Major Third.	5	5
	6	6 = (3 × 2)
Minor Seventh.	7	7
	8	8 (2 × 2 × 2)
Supertonic. Major Second.	9	9
	10	10 = (5 × 2)
Sub-Dominant. Perfect Fourth.	11	11
	12	12 = (3 × 2 × 2)
Sub-Mediant. Major Sixth.	13	13
	14	14 = (7 × 2)
Leading Note. Major Seventh.	15	15
	16	16 = (2 × 2 × 2 × 2)

etc

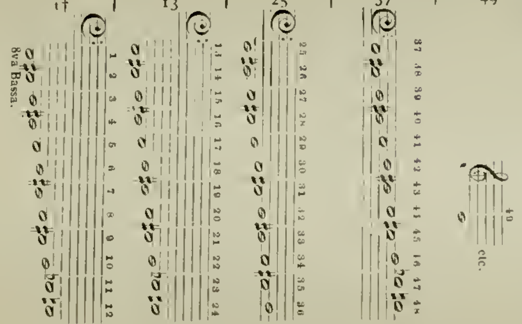
* The bracketed figures indicate that the partial has occurred in a lower octave; the first figure indicating the number of the harmonic and each 2 after it, that it occurs an octave higher; for example: g, the dominant, is No. 3 of the series, the g′ an octave higher is 3 × 2 = 6 and the g″ two octaves higher is 3 × 2 × 2 = 12.

TABLE OF PITCH

Calculated on the standard open organ pipe, showing various equivalent methods of nomenclature.



32ft. C. ″C*	16ft. C. ′C	8ft. C. C	4ft. C. c	2ft. C. c′	1ft. C. c″	6in. C. c‴	3in. C. c⁗	1½in. C. c′′′′′
C̲	C̲	C	c	c̄ or c¹	c̿ or c²	c or c³	c or c⁴	c or c⁵
CCC	CC	C Great C	c Tenor C	cc Middle C	ccc Treble C	cccc C in Alt.	ccccc C in Alt.	cccccc
1†	13	25	37	49	61	73	85	97



* All the notes of the scale, from C to B, follow the nomenclature of the C, thus 12ft G ′G, G, GG or (20) in M. V. Mahillon's international system.

† New international system of nomenclature for indicating the pitch of all the degrees of the scale proposed by M. Victor Mahillon at the International Musical Congress held in Paris in 1900 and duly adopted at the sitting of June 16. The C of every octave, starting from 32ft. C, begins a new sequence of 12, the intermediate twelve figures being applied to the chromatic semitones of each octave.

SECTION I.

WIND INSTRUMENTS.

CHAPTER I.

CLASSIFICATION.

THE instruments of the orchestra may be divided into three sections.

STRINGS. WIND. PERCUSSION.

It has been thought best to begin by describing wind instruments, for the reason that they are less generally understood than are those comprised within the term "strings.'

WOOD WIND.

(a) Without Reeds:—The Flute, The Piccolo.

(b). With Double Reeds:—

The Oboe, Cor Anglais, Bassoon, Double Bassoon.

(*c*) *With Single Reeds:—*

Clarinet, Basset Horn (Tenor Clarinet), Bass Clarinet, Pedal Clarinet, Saxophone (classed with the clarinet, although made of metal, on account of the single-reed mouthpiece).

Brass Wind.

(*a*) *With funnel-shaped mouthpiece:—*

French Horn, Wagner-Tubas, Cornophone.

(*b*) *With cup-shaped mouthpiece:—*

Trombone, Trumpet, Tubas, Saxhorns, Ophicleide, Doublophone, Cornet.

Wind instruments were used in Bach and Handel's time almost exclusively to double the value of the strings in unison; their independent use in orchestras dates from Haydn and Mozart. The position of wind instruments has gained, and is still gaining enormously in importance; there have been more deviations from the old accepted paths of instrumentation, with regard to wind instruments than to any other. Berlioz and Wagner's treatment of them was specially novel and revolutionary, calling forth much adverse criticism and hostility. This large class of instruments is divided and sub-divided many times, and it may help amateurs in recognising and remembering their characteristics, to mention a few of their chief differences.

The Wood Wind, besides being classed as above, according to their mouthpieces, may be further divided thus:

(*a*) Instruments with *conical* bore, such as the Oboe family and the Saxophone (in brass wind, the French Horn, the Tubas, Ophicleide).

(*b*) Instruments with *cylindrical* bore, such as the

Clarinet family, the Flute (in brass wind, the Trombone, Trumpet, Cornet).

The Brass Wind, besides being classed as above according to their mouthpieces, may be further divided thus:

(*a*) Tubes of fixed length, ex.: Natural Trumpet, Natural French Horn.

(*b*) Tubes whose length is varied by means of a slide, ex.: Slide Trumpet, Slide Trombone.

(*c*) Tubes whose length is varied by means of lateral holes, ex.: Keyed-Bugle, Ophicleide.

(*d*) Tubes whose length is varied by means of valves, ex.: Cornet, Tubas, French Horns.

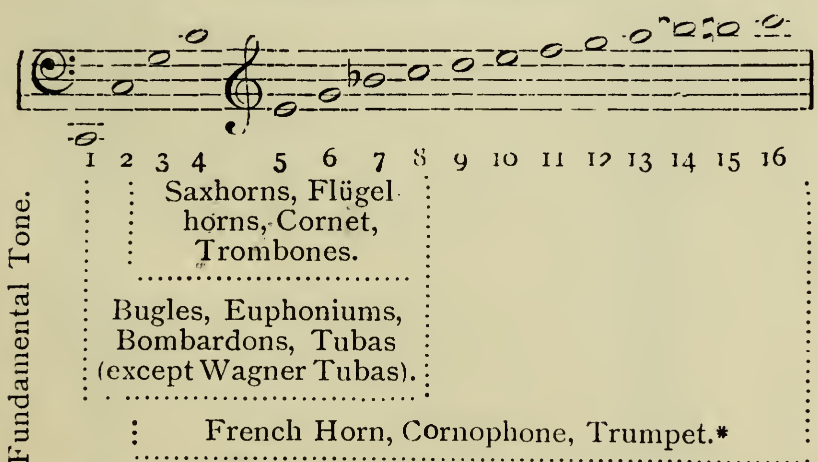
The Brass Wind may again be sub-divided in the following manner according to the harmonics given out by the tubes:—

(*aa*) Those which give out all the harmonics up to the 16th, such as the French Horn and the Trumpet.*

(*bb*) Those which give out harmonics from the 2nd to the 8th without the fundamental tone, such as the Cornet.

(*cc*) Those which give out the fundamental tone and the harmonics up to the 8th, such as the Euphonium, Trombone and Tubas.

HARMONIC SERIES.



* The practical compass of the trumpet begins with the third harmonic. With some crooks it is possible to produce the fundamental on the French Horn, but the note is of no practical value.

CHAPTER II.

WOOD WIND.

The Flute in C (also called in D.)

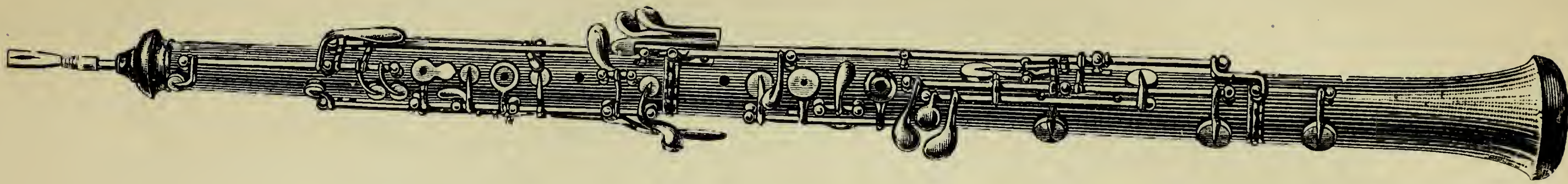
(Transverse Flute.)

French, Flûte (traversière). *German*, Flöte (Querflöte).
Italian, Flauto (traverso).

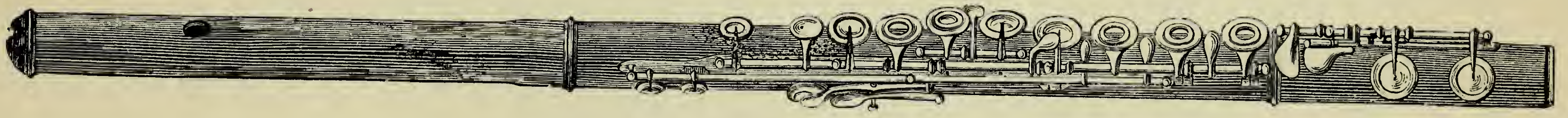
Construction.—The Flute belongs to the class of wood wind instruments without reeds, and consists of a tube, open at the lower end and nominally closed at the upper, beyond the embouchure or mouth-hole, by means of a conical cork stop. In flutes made after Boehm's system, the tube has now instead of the old conical bore, a cylindrical one, terminating in a head with a parabolic curve. This tube consists of three joints:

(1) *The Head*, plugged at the upper end and containing, at about the third of its length, the orifice called embouchure, across which the performer directs the breath obliquely with the lips without closing it.

(2) *The Body*, containing the holes and keys necessary to produce the scale which gave the flute its old designation of D flute; the head and body together should theoretically give the fundamental note D, the six finger-holes being closed, and this is actually the case in the piccolo which is built without the foot; but, mechanical exigencies connected with the addition of



Oboe, with Seventeen Keys, Rings and Thumb Plate. *(Messrs. Rudall, Carte and Co.)*

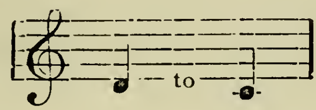


Cylinder Flute, with Parabolic Head Joint, Boehm's System. Rockstro's Model. *(Messrs. Rudall, Carte and Co.)*

To face page 4.

this joint, render it impossible to preserve the original length of the body, so that the D is now produced through the second open key in the foot instead of being given out by the end of the tube formed by body and head together.

(3) *The Foot*, containing the additional keys necessary for extending the compass from



Flutes are made of various materials, wood (cocus), silver, gold and ebonite. The cone flute with open finger holes has now been entirely superseded in England by flutes constructed on the Boehm system.

Production of Sound.—The flute is held transversely, with the embouchure turned slightly outwards, so that the player's breath strikes the sharp outer edge of the orifice setting up a flutter which reacts upon the stationary column of air within the flute, thus generating the sound waves. There are sufficient holes and keys on the flute to produce all the chromatic semitones of the first octave. The next two octaves are obtained through the same holes by overblowing, *i.e.*, by increased breath pressure and a change in the position of the lips whereby the notes of the fundamental octave are reproduced an octave, a twelfth or a double octave higher, aided by various devices for facilitating the production of these harmonic overtones.

Compass.—The compass of the newest C flutes is three octaves, with chromatic semitones from

The treble clef is used in notation.

The flute is a non-transposing instrument, the music being played as written; this was not the case when the flute had D for its lowest note.

Quality of Tone.—The peculiar timbre of the flute is characterised by a slight hollowness which may be accounted for by the paucity of upper partials present in the *clang* for which, it is thought, the construction and proportions of the interior of the head may be responsible. The tone differs greatly in the three registers of the flute; the lowest being sonorous; the medium, sweet and elegiac; the highest, bird-like and brilliant.

Possibilities.—It is possible to play on the flute sustained notes, diminuendo and crescendo; diatonic and chromatic scales and arpeggios, both legato and staccato; leaps, turns, shakes, etc. By the articulation with the tongue of the syllables "te-ke" or "ti-ke" quickly repeated, for groups of two or four notes, and of "te-ke-ti" for triplets, an easy, quick staccato, useful in accompaniments is produced. This is called double or triple tonguing. Two or three flutes are used in large orchestras in harmony or unison, and one of the flute players takes the piccolo when necessary.

Origin.—The flute is one of the most ancient instruments. The Egyptians had a long flute, held transversely, and of such length that the player's arms were stretched out to their full extent downwards. This flute, known as the *nay*, was used without embouchure by blowing across the open end of the pipe; eight persons are represented playing these nays on a tomb at Gizeh. Double pipes are seen repeatedly on their monuments; they were played with reed mouthpieces and were therefore oboes or clarinets, not flutes.

The Greek *aulos* and the Roman *tibia*, erroneously translated flute in many classics, were also pipes played by means of a double or a single reed mouthpiece and were therefore prototypes of the oboe and not flutes. The Etruscans, before the Romans, used the *aulos* as their chief instrument,

both in its single and double form, and it is represented in mural decorations and on their beautiful vases. It is doubtful whether the Greeks used the flute proper, as did the Egyptians. We do not know exactly how the flute passed from the older civilizations to the newer in Europe; it was probably made known by the Moors or the Crusaders. In an illuminated MS. of Byzantine workmanship in the British Museum (Add. MS. 19352) dating from the 11th century is a musician playing on a transverse flute; another representation of the same century occurs on a fresco in the Cathedral of Kiev, where, among a group of instrumentalists, is a man playing the flute. The earliest representations the author has found, however, are the transverse flute on Slab 17 of the Tope of Amarāvati* on the Grand Staircase at the British Museum, dating from the first or second century of our era: and the transverse flute played by a bear on one of the frescoes at Kusejr 'Amra†, cir. 8th cent. The flute seems to have been more fully developed in Germany during the middle ages than elsewhere. It existed in two forms: the direct or vertical, like the recorder and the flageolet, which are no longer in use in orchestras, and the German or transverse flute, which superseded the other form as 1720.

Bach gave the flute great prominence in obbligato and concerted passages, and since then it has been a favourite with all the great masters. Beethoven and Mendelssohn assigned to it the leading part for wind instruments. The flute generally plays with the violin, sustains notes with other wind instruments, or carries on conversations with the oboe and clarinet families, as in the grand symphony in C major by Schubert.

---

* For an illustration, see James Fergusson, "Tree and Serpent Worship." London, 1873.

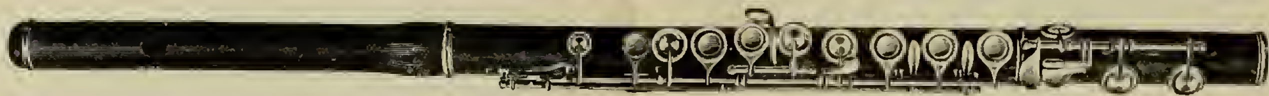
† "Kusejr 'Amra." Kgl. Akad. der Wissenschaften. Vienna, 1907. Pl. XXXIV.

CHAPTER III.

WOOD WIND.

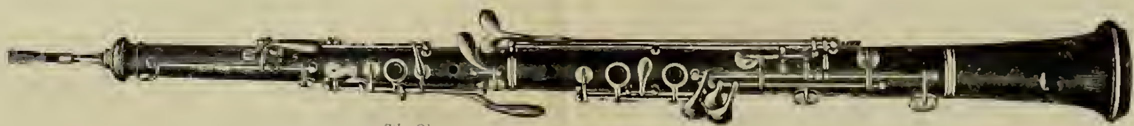
The Piccolo or Octave Flute.

French, Petite Flûte Octave. *German*, Pickelflöte.
Italian, Flauto Piccolo, or Ottavino.



The Concert Flute.

The Piccolo or Octave Flute.



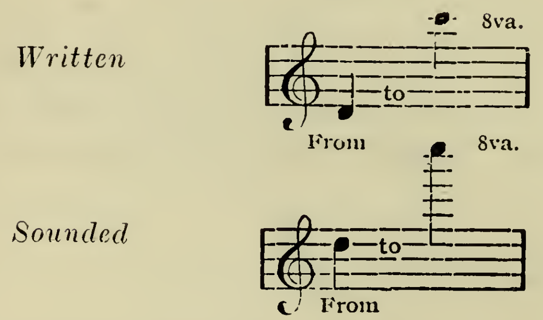
The Oboe.

The Piccolo, which belongs to the wood-wind class of instruments without reeds, is really only a flute on a small scale, having less than half the dimensions of the large concert flute. Its principle of construction is the same, and so is

the method of producing the sound. See chapter on *Flute*.)

Compass.—It is called Octave Flute because its compass lies an octave higher than that of the concert flute, and the music for it is written an octave lower than the real sounds to avoid using so many ledger lines. The piccolo does not contain the additional tail-piece with the extra low keys, which give the flute its extended compass. For the reasons of its being called both C and D Octave Flute or Piccolo, see Flute.

Compass.—This extends with all chromatic intervals:—



Quality of Tone.—The notes at both extremes are not much used; the lower, because their tone is weak and ineffective, the upper, because of their extreme shrillness, and of the difficulty of playing them anything but *fortissimo.*

This instrument, except for a few harmonics on the violin, is the acutest in pitch existing. The medium register is the most used; its tone is clear and sharp. The Piccolo has been found of the greatest value in imitative music, to depict the whistling of the wind in storms as in Beethoven's "Pastoral Symphony," Wagner's "Flying Dutchman," and in conjunction with the violins in tremolo, to depict the rustling of leaves in the breeze, as in the beautiful "Waldweben" in "Siegfried" and the "Götterdämmerung." Verdi, in his "Falstaff," has shown that it can become a powerful comic agent, helping to reflect in the orchestral music the humorous situations of the drama. Berlioz had a great *penchant* for the piccolo. An exhaustive description of it may be found in his "Treatise on Instrumentation."

The piccolo is used singly in orchestras, and is generally played by one of the flautists. (For the origin of the instrument, see chapter on the Flute).

CHAPTER IV.

WOOD WIND.

The Oboe.

(The Shawm.)

French, Hautbois. *German*, Hoboe. *Italian*, Oboe.

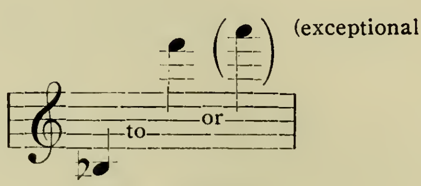
The Oboe is an elaborate and complicated instrument of the double-reed, wood wind, class.

Construction.—It is composed of a wooden tube with conical bore, widening out to form a small bell, and having at the opposite end a short metal tube, to which are bound by silk, the two thin pieces of cane forming the mouthpiece. Into this the player breathes gently, managing the breath as for singing. As he is obliged to loosen the lips from the mouthpiece, to breathe out the superfluous air, he cannot, therefore, execute very long passages without pauses.

Production of Sound.—The notes are produced by holes, some open, others closed by keys raised by means of levers. The newest models possess three or four alternative fingerings for certain awkward notes, which reduces the difficulty in fingering inconvenient passages. It is to Barret we owe the greatest improvements in this instrument. The oboe, like the flute, is an octave instrument, that is to say it overblows the

octave. The oboe possesses notes sufficient for an octave or more with chromatic intervals. The next octaves are obtained by means of cross fingering and of the octave keys, which do not give out an independent note of their own, but determine a node in the column of air, and so raise the pitch of any other note played an octave.

Compass.—The compass of the oboe is from :



The treble clef is used in notation.

The oboe is a non-transposing instrument which sounds the real notes written.

Quality of Tone.—If the reader wishes to distinguish the oboe speaking in the orchestra, let him bear in mind the quality of the E string on the violin; that will assist him in hearing the oboe. The quality of the tone is very penetrating (it can be distinctly singled out in a full orchestra playing forte) and rather shrill in the upper register, the lower being, though thin, sweeter and more like that of the cor anglais. The quality does not otherwise vary much in the different registers. On account of this want of variety in tone and colour, it is not a favourite solo instrument. In the orchestra, it is invaluable as a melody-leading instrument, balanced by clarinets and flutes. It is especially suitable for pastoral music.

Possibilities.—It is possible to play on this instrument, diatonic and chromatic scale and arpeggio passages, legato and staccato; leaps (staccato only); cantabile passages, sustained notes, diminuendo and crescendo; grace notes and shakes (with reservations). Keys with many flats are the most difficult for the oboe player.

Origin.—The oboe is of very ancient origin; it is derived from the instruments called at various times, shawm, shalm, schalmey, chalumeau (from the Latin *Calamus*, a pipe), with the bombard and pommer as tenor and bass. The discant shawm became the oboe, the transformation taking place during the seventeenth century in France. The archetype of the oboe has been found depicted in sculpture and painting in Egypt and Greece, and specimens have been discovered in tombs, and mummy cases, with straws or reeds by their side, which were evidently intended for mouthpieces. The Greek *aulos* and Roman *tibia* were prototypes of the oboe. They can be seen in the British and Victoria and Albert museums, together with specimens from other parts of the globe.

There are generally two or three oboes in an orchestra, and they play either in parts or in unison. Oboes were first used in military bands before being used in churches or for secular music, and their name, haut-bois, indicates that they were the trebles of the wood wind. The oboe assumed its present shape early in the seventeenth century.

CHAPTER V.

WOOD WIND.

Cor Anglais or English Horn.

German, Englisches Horn. *Italian*, Corno Inglese.

This instrument, which is better known by its French than by its English name, is not a horn, but a double-reed wood-wind instrument of the oboe family, of which it is the tenor; it bears the same relation to the oboe as the basset-horn does to the clarinet.

Construction.—The Cor Anglais differs slightly from the oboe, in that it is a little longer, has a larger globular bell, and the wooden tube with conical bore is furnished with a bent crook, holding the mouthpiece. The fingering and the method of producing the sound are so similar to those of the oboe, that the player of the one can, in a short time, master the other.

Compass.—The compass and clef are the same as for the oboe, but the Cor Anglais is pitched a fifth lower, being tuned to F. It is a transposing instrument, the music for it being written in a key a fifth higher than

that of the composition. For example: a piece in A major would have to be written in E major for the English horn.

Compass Written

Real Sounds

The treble clef is used in notation.

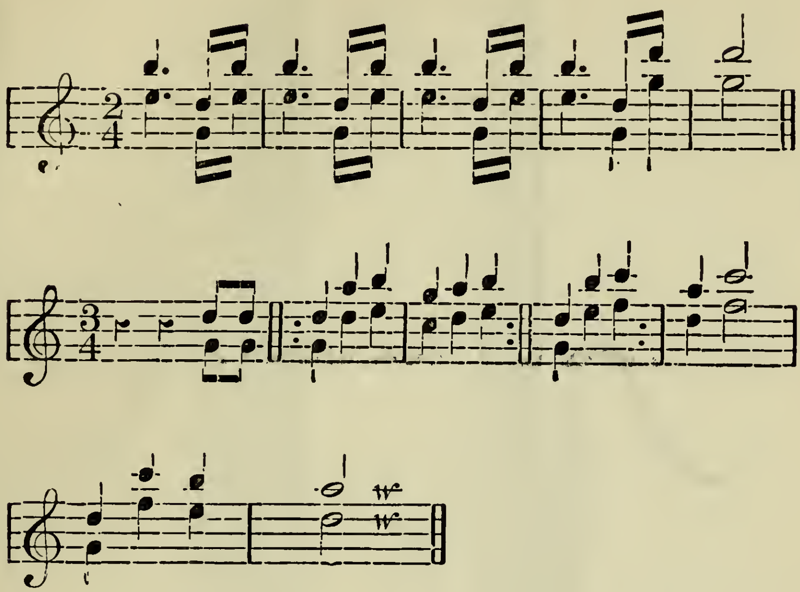
Cor Anglais

or

English Horn.

Quality of Tone.—The tone of the Cor Anglais is of the same penetrating quality as that of the oboe; the pitch is lower, but the tone sweeter and more melancholy, and often sounds like a wail. If the reader will bear in mind the quality of tone of the E and A strings of the violin when muted, it will assist him in distinguishing the English horn in the orchestra. This instrument, on account of its peculiar sweetness, is very suitable for pastoral music, and for expressing longing and tenderness, regrets or sweet memories, as in "Tristan and Isolde," in which opera it is extensively used. The following well-known passage in Act III. is played by the Cor Anglais, reinforced by the oboe, and sometimes by the clarinet also, according to the acoustic properties of the house. Wagner, however, not entirely satisfied with the Cor Anglais for representing the natural pipe of the peasant, which he imagined somewhat to resemble an "Alpenhorn," caused an instrument to be made specially for him, which he called "Holztrompete," or wooden trumpet. This instrument resembles the Cor Anglais in form, being a wooden conical tube with a small globular bell; it differs, however, in that it has neither holes nor keys, only one piston placed at a third of the distance between the mouthpiece and bell; it is played through a cup-shaped mouthpiece by overblowing, that is to say, that by the varied tension of the lips, and pressure of breath, the upper partials from the 4th to the 12th are produced. This instrument is in C, and is a non-transposing one. In the following example from "Tristan and Isolde," the upper notes are those written for the Cor Anglais, the lower for the Holztrompete, which are also the real sounds of the Cor Anglais.

From the Drama of "Tristan and Isolde." Act III.

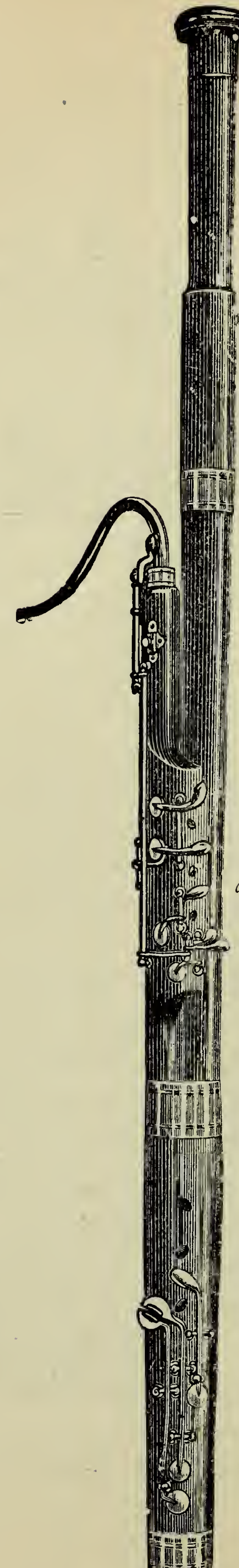


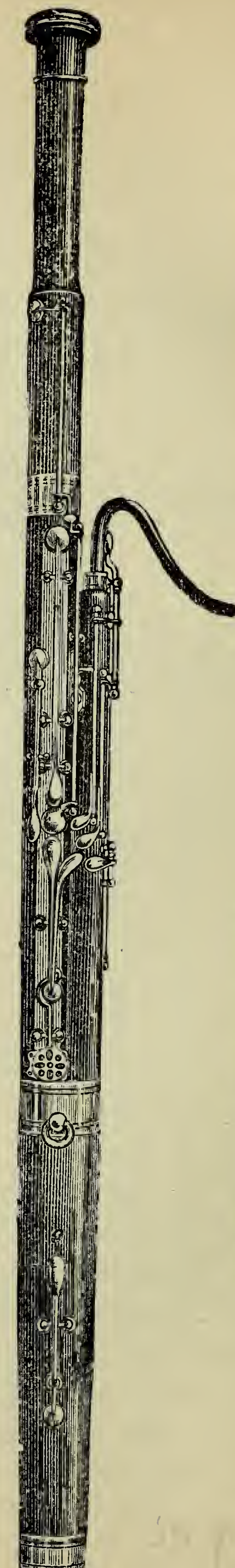
Possibilities. It is possible to play the same kind of music on the Cor Anglais as on the oboe, but the peculiar timbre of the instrument renders florid music quite unsuitable to it. Keys with many sharps or flats are the most difficult for the English horn.

Origin. Cor Anglais is a misnomer, for it is neither a horn, nor is it English; the *Anglais* is a corruption of "*Anglé*," meaning "bent." This instrument was sometimes found bent at an obtuse angle in the middle of the tube, and all countries have adopted the misnomer and translated it; the instrument is always made straight now. Like the oboe, it is a very ancient instrument, developed from the shawn through the family of pommers, of which the Alto was the immediate forerunner of the Cor Anglais. The exact date at which the Cor Anglais assumed its present form is unknown; it was presumably in the 17th century, at the same time as the oboe.

Gluck was the first to introduce it into the orchestra

The Holztrompete.





Improved Savary Model Bassoon with 17 Keys. (Back and Front View).

Oboe Double Reed Mouth-Piece

Bassoon Double Reed Mouth-Piece

in his opera "Alcestis" in 1767, unless Bach's "Oboe di Caccia" can be identified as the Cor Anglais. The former is a most rare instrument, of which very little is known; one specimen is to be seen at the South Kensington Museum. This instrument was ignored entirely by Beethoven, Mozart and Weber, but modern composers, Berlioz, Meyerbeer, Rossini and especially Wagner, have fully appreciated its value.

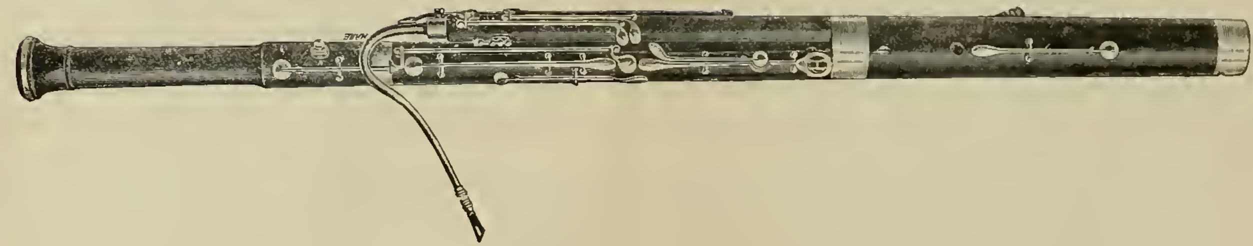
CHAPTER VI.

WOOD WIND.

The Bassoon.

French, Basson. *German*, Fagott. *Italian*, Fagotto.

The bassoon belongs, like the oboe, of which it is the



The Bassoon.

bass, to the class of wood-wind instruments with a double-reed mouthpiece.

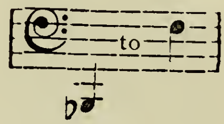
Construction. The bassoon resembles a bundle of sticks; hence, its name iu German and Italiau; whereas the French and English names refer to its pitch, which is au octave lower than that of the oboe. It consists of five pieces, which, wheu fitted together, form a wooden tube about 7 ft. long, with a conical bore. This tube is doubled

back upou itself, the shorter joint reaching to about two-thirds of the longer, which reduces the height of the instrument to about 4 ft. The five pieces are the *bell*, and the *long joints* forming the upper part of the instrument when played (though its notes are the lowest in pitch), the *wing* overlapping the long joint, to which is attached the *crook*, a narrow metal tube, curved, and about 12 inches long, to which is attached the double-reed forming the mouthpiece; lastly, there is the *butt*, which is the lower end of the instrument (when it is beiug played). This butt joint contains the double bore necessitated by the abrupt bend of the tube upon itself: both bores are pierced in one block of wood.

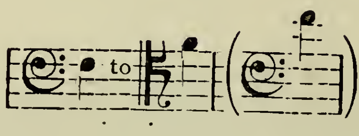
Production of Sound. The instrument is held in a diagonal position by the player, the lower part of the tube, played by the right hand, resting against his right leg and the little bell turned upwards in front of his left

shoulder. The notes are produced by holes and keys similar to those of the oboe. The mechanism and the fingering of the Bassoon are very intricate.

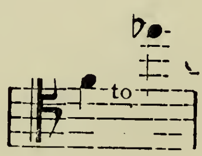
From B flat to F



These notes are produced by means of the keys only; the next octave from



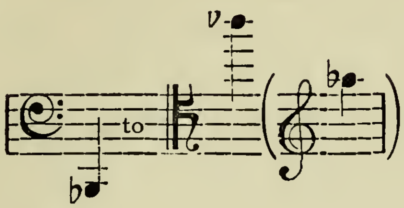
is obtained by overblowing the notes of the previous octave an octave higher, and from



the notes are produced by overblowing the first or fundamental notes a 12th.

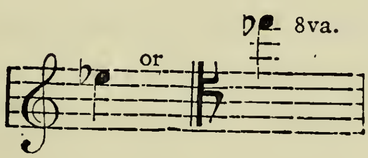
The power of obtaining a clear intonation depends a great deal on the correctness of the performer's ear; the bassoon and the trombone are the only instruments which resemble the strings in this particular. Bassoons, by old makers, Savary in particular, are generally considered preferable to those of modern makers, as none of the attempts to improve or simplify this complicated and difficult instrument have proved successful. It is the only reed of which this can be said.

Compass. The Bassoon is an 8 ft. tone instrument, reaching from B flat bass to A flat treble; its pitch lies two octaves below that of the oboe.



In notation, the bass and tenor clefs are used. The bassoon is not a transposing instrument—the music is written as sounded.

Quality of Tone. The tone varies very greatly in the different registers, being hard and thick in the lowest, sonorous and sweet in the medium, and very, very sweet in the upper register. The newest models have small harmonic holes near the crook, which enable the player to



extend the compass to E flat in the treble. These notes are called "vox humana" from their extreme sweetness; they greatly resemble those of the middle register of the Cor Anglais. The timbre of this instrument is similar to that of the 'cello, but more nasal and less penetrating.

Possibilities. It is possible to play diatonic and chromatic scale and arpeggio passages, both legato and staccato, provided the tempo be not too quick and that the signature do not contain too many sharps or flats; sustained notes, crescendo and diminuendo; grace notes, etc.

Origin. The bassoon has been greatly valued in orchestras for two centuries or more; at first only as a bass instrument, but now as a tenor, or even alto occasionally. There are usually two bassoons, sometimes three, in the orchestra, and they play in parts or in unison. Haydn entrusted solo melody passages to it, as in the Minuet of the "Military Symphony," and gave it great prominence in his orchestral works; as did Beethoven, Mozart, and even Bach; indeed, it seems a great favourite with all the great masters except Handel, who rarely made much use of it. It is this instrument which is made by Mendelssohn in the "Midsummer Night's Dream," to represent the braying of the ass.

This instrument, like the oboe, is thought to be of great antiquity in origin, its prototype being the shalmey or shawm; but in its present form (like a bundle of sticks), it is said to have been discovered by Afranio of Ferrara, in the middle of the sixteenth century. The immediate forerunners of the bassoon, the pommers, brummers, bombards, as they were variously called, were already in use early in the sixteenth century—some time before Afranio's discovery, when there was a complete quartet of them. They consisted of a conical tube of wood, with a bell at one end and a bent metal tube at the other end, with a double-reed mouthpiece. The pommers were straight like oboes, and had pegs, which, when removed, altered the key of the instrument. This device would not be of much use in our modern music with its many modulations and abrupt transitions of keys.

The bassoon corresponds to the 'cello in strings, the bass-clarinet in single reeds, and the bass tuba in brass wind instruments.

CHAPTER VII.

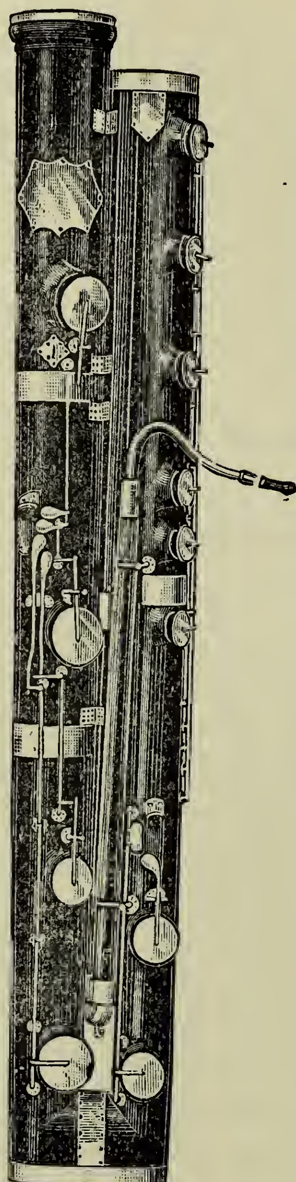
The Double Bassoon.

French, Contrebasson. *German*, Contrafagott.
Italian, Contrafagotto.

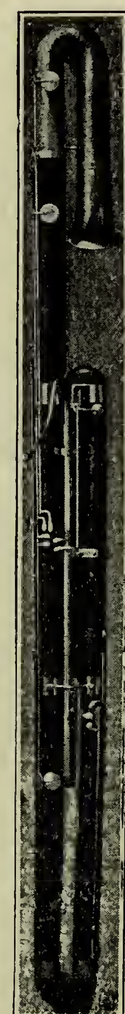
As its name indicates, this instrument is the contra of the bassoon, and belongs to the double-reed, wood-wind class.

Construction. There are two chief makes:—(1). The Belgian, chiefly used in French-speaking countries, consisting of a conical-shaped metal tube, with a large bell, it rather resembles the bombardon in outline than the bassoon. The tone of this instrument is naturally not the true bassoon tone merely extended in its lower register, for the brass tube slightly increases the hardness and roughness of tone, unavoidable in any case. (2). The German "Contrafagott" (of which there are several models, Heckel's being the best known at the present time), which is more like the bassoon, consists of a wooden tube 16ft. 4in. long, with conical bore doubled back 4 times on itself to make it less unwieldy; it terminates in a bell about

4 inches in diameter: and has a crook about 2 feet long, formed of a small brass tube with very narrow bore, to which is bound the double-reed mouthpiece.



The Double Bassoon.



Heckel's Double Bassoon.

Production of Sound. The notes are formed through holes fitted with keys raised by levers, as in the bassoon; but the fingering of the double-bassoon is by no means so complicated.

Compass. The pitch of this instrument is an octave below that of the bassoon, and three octaves below that of the oboe; the compass extends from 16ft. C to middle C.

The notes of both extremes are difficult to produce. The bass clef is used in notation. Though the instrument is not a transposing one, the music is always written an octave higher than the true sound to avoid using too many ledger lines.

Quality of Tone. The tone is rough and a little rattling in the lowest register, but in the medium and upper, more like that of the bassoon; its volume of sound is not quite adequate to the depth of pitch, which might be expected to be the case, seeing the comparative smallness of the mouthpiece.

Possibilities. The double bassoon possesses every chromatic semitone throughout its whole compass, and can therefore play with facility in any key. Quick passages are neither easy to play, nor would they be effective, for this is essentially a slow speaking instrument. The lowest notes are very difficult to produce, and almost impossible to play *piano;* but the instrument forms a grand bass to the reed family, and supplies the four notes missing in the double bass to reach 16 foot C.

Origin. The double bassoon traces its origin back to remote ages, like the rest of the reed family: its immediate forerunner was the shalmey or pommer family. (See Oboe, *Origin*). The exact time when this instrument took its present form is wrapped in obscurity, but we may safely

assume it to be at a time subsequent to that at which the oboe became known as such, that is to say, during the first half of the seventeenth century. We know that Handel scored for it, and that it was in use in military bands before it was introduced into the orchestra. Owing to its faulty construction, and weak, rattling tone, it fell into disuse in spite of the fact that the great masters, Haydn, Mozart, Beethoven, scored for it abundantly; it was not restored to favour till 1871, when Dr. William Henry Stone re-introduced it into English orchestras; having designed improvements on Haseneier's make (Coblenz), he had them carried out by Morton, and that make almost exclusively is used in English orchestras.

Beethoven has scored for the double-bassoon in the C minor and the Ninth Symphonies, and has even written an obbligato passage for it in "Fidelio." The double-bassoon corresponds to the double-bass in strings, in brass wind to the contra-bass-tuba, and in single reeds to the Pedal Clarinet.

CHAPTER VIII.

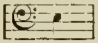
The Clarinet or Clarionet.

French, Clarinette, *German*, Klarinette. *Italian*, Clarinetto.

Construction. The Clarinet is a single-reed wood-wind instrument, composed of a cylindrical tube of wood (generally cocus), terminating in a small bell. The beak-shaped mouthpiece of wood or ebonite (the latter substance does not crack or suffer from moisture), fits into a socket in the upper part of the tube. To this is bound by a ligature adjusted by two screws, a thin and flattened piece of reed, which the player sets vibrating by blowing into the mouthpiece, thus producing the rich, mellow sounds peculiar to the clarinet family.

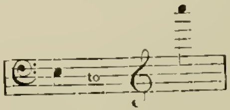
Production of Sound. The notes are formed by means of nine open finger-holes and nine closed by keys raised by levers; these, with the bell, produce the 19 semitones which constitute the fundamental scale of the clarinet; the rest of its compass is obtained by a key contrivance, which determining a node in the bore, raises the pitch of the

instrument a twelfth. The fundamental bell-note, which in the *C* clarinet was E

 will now be B 

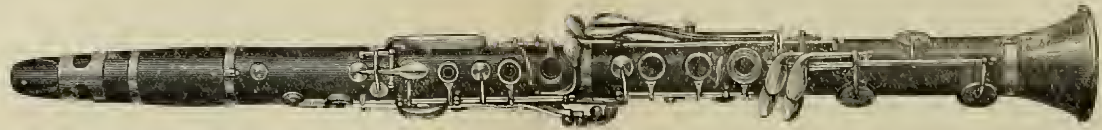
and so on with each of the finger-holes.

Compass. The compass of the clarinet is 3 octaves and a 6th with chromatic intervals, from E to C; the treble clef is used in notation. Real sounds from:

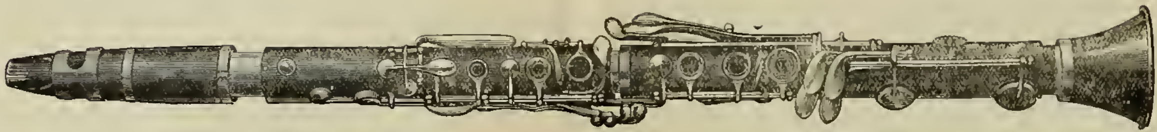


The lowest register is called Chalumeau.

There are three principal treble clarinets tuned to C, B flat and A major, and as the fingering is the same for each, notes played on the B flat clarinet sound a tone lower, and on the A clarinet a minor third lower than the corresponding note on the C clarinet; it follows, therefore, that the music for the B flat clarinet must be written in a key a tone higher, and for the A clarinet 1½ tones higher



The "Clinton" B flat Clarinet Normal Position.



The "Clinton" Clarinet Opened in A.

than that employed in the composition; the clarinet is called a transposing instrument. For example:

For the C clarinet or for the real sounds on the B flat and A clarinets:—

From Beethoven's Symphony, C minor, *Andante con moto*

For the B flat clarinet written thus:—

For the A clarinet written thus:—

Quality of Tone. The Quality of tone of the three clarinets varies greatly; that of the C being shrill, hard, and less powerful than that of the other two; it is on that account little used, except for open-air music. The B flat clarinet is remarkable for great brilliancy, and sonorousness, and is the most generally used, especially as solo instrument; the A clarinet is sweet and mellow. Composers take these differences of tone as well as those of pitch into consideration when writing for the instrument.

A new kind of clarinet, the Combination, patented by James Clinton and named after him, by means of an ingenuous contrivance, enables the performer to change his instrument instantly from B flat to A Philharmonic pitch, and also to B flat *diapason normal.* The instrument is so constructed that the performer can lengthen it out at the three joints sufficiently to produce the change in pitch (see illustration of normal position in B flat which outwardly resembles the ordinary clarinet in B flat, and opened in A). The advantage of this will be readily understood; the intonation in both keys is perfect, as the performer does not use a cold instrument, which is liable to produce the first few notes out of tune when he changes from one key to another;

and this change on the combination clarinet can be performed in a second, the joints returning to their normal position by means of a spring.

As in military bands the clarinets replace the violins, a smaller clarinet in E flat is used in addition, whose pitch is $1\frac{1}{2}$ tones higher than that in C. The clarinet is much used for solo chamber and orchestral music; in the latter it very suitably carries on the melody, two or three clarinets being used sometimes in harmony, sometimes in unison.

Possibilities. It is possible to play on this instrument sustained notes, diminuendo and crescendo; diatonic and chromatic scale and arpeggio passages, both in legato and staccato style; grace notes, shakes, etc. Keys with not too many sharps or flats are the easiest for the clarinettist.

Origin. The name of the instrument is derived from the the *Italian* "Clarino," *English* Clarion, trumpet; its mediæval prototype is probably, in common with all reed instruments, the shalmey or shawm. This was in its most primitive form a plain reed, called by the Romans, *calamus*, which gave its name to the lowest register of the modern clarinet. Roman Pifferari and Italian shepherds still use a similar reed-pipe or shalmey. But to see it in its most primitive form, one must seek it among the peasants of the lower Rhine, where the youths make it in the spring, of green reeds or soft bark; it possesses a soft dreamy tone, not unlike that of the chalumeau register of the modern clarinet. The latter has only been known as such since about 1690, when it is said to have been invented by Johann Denner, of Nuremberg.

Neither Bach nor Handel has scored for the clarinet; Mozart was the first to make any extensive use of it in an orchestra, as a melody leading instrument. Beethoven,

Weber, Schumann, and, in our own time Wagner and Brahms, have made the greatest use of this beautiful and effective instrument.

CHAPTER IX.

The Basset Horn.

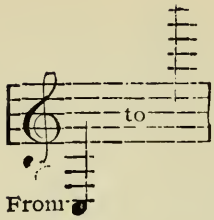
French, Cor de Bassette. *German,* Bassett Horn. *Italian,* Corno di Bassetto.

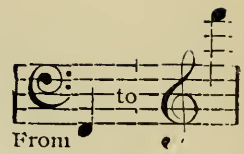
The Basset **H**orn is the tenor clarinet, and therefore belongs to the family of wood-wind, single-reed instruments.

Construction. It is composed of a cylindrical tube of wood with a cylindrical bore ending in a bell, larger than that of the clarinet; it is played through a beak-shaped mouthpiece containing a single reed. The basset horn has usually an angular bend in the middle, or it doubles upon itself like the bassoon, but with a larger bell, or the bell is turned upward in the contrary direction to the bend of the tube near the mouthpiece, like the bass clarinet.

Production of Sound. The basset horn has the same fingering as the clarinet, but its pitch is a fifth lower than that of the C clarinet (which see).

Compass. The compass of this instrument is four octaves, from F (8ft.) to F in the treble.

Written 

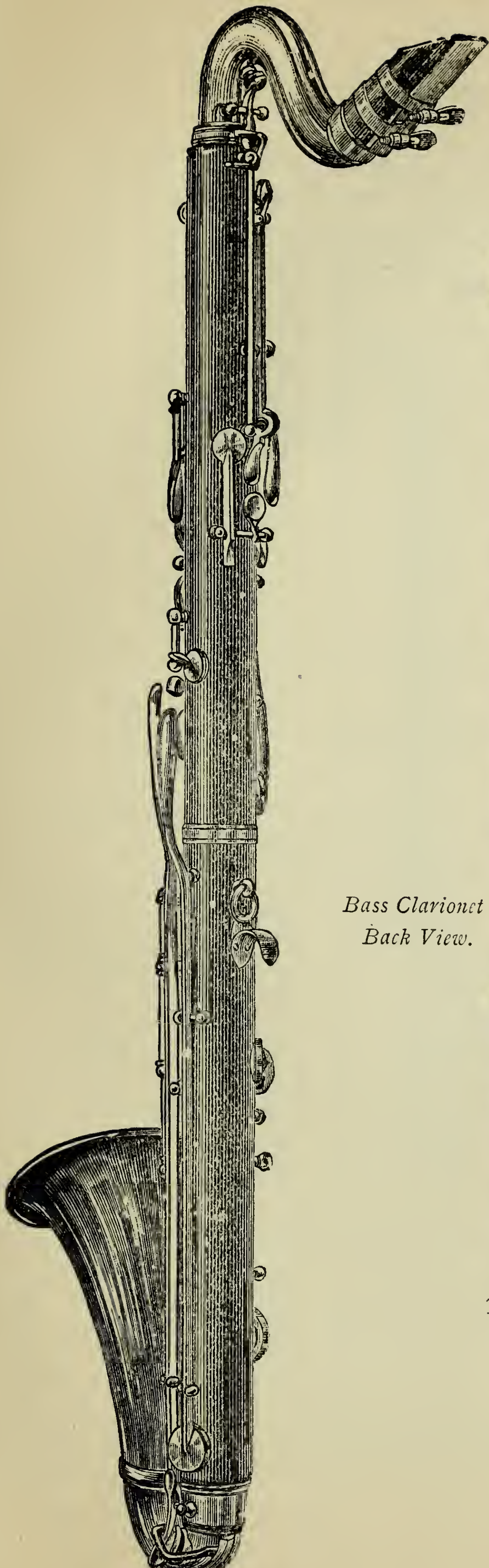
Real Sounds 

The basset horn is a transposing instrument, being in the key of F, and its music is written a fifth higher than the real sounds. The treble clef is used for all but the very lowest, for which the bass clef is used.

The Possibilities are the same as for the clarinet, except that the three or four lowest notes can only be intoned slowly and detached; the upper register being better represented in the clarinet, is not much used.

Quality of Tone. The quality of tone is extremely reedy, and rich in the low register, which is the most useful for orchestral purposes.

Origin. The Basset horn was invented by Horn, of Passau, in 1770; hence its name, which has nothing to do with the horn. In French the maker's name has been translated into Cor, while Bassette is a diminutive of bass. The predecessors and the prototypes of the basset horn are respectively the pommers and the shalmeys, as of the clarinet (which see). Mozart, Beethoven, and Mendelssohn have written a great deal of chamber and orchestral music for this instrument, and with modern masters, its popularity is on the increase.



Bass Clarionet
Back View.

Tenor Clarionet or
Basset Horn.
Front View.

The Basset
Horn.

CHAPTER X.

The Bass Clarinet.

French, Clarinette Basse. *German*, Bass Klarinette.
Italian, Clarinetto Basso.

The Bass Clarinet is practically the A, B flat or C clarinet, speaking an octave lower and what has been said of the fingering and transposing of the clarinet, holds good with regard to this instrument.

Construction. The form of the bass clarinet differs from that of the treble clarinet in that it has a large gloxinea-shaped bell doubled up on the front of the instrument; the tube at the other extremity is serpent-shaped, and to it the mouthpiece is bound by means of a strong ligature with screws.

Production of Sound. The sound is produced in the same manner as for the clarinets. On account of the great length of the instrument, the holes lie very far apart, which would make the instrument a very difficult one to play, but for the clever arrangement of the keys on long rods. The

first makers of the instrument who did not understand key work made many futile attempts to cope with this difficulty by making the bore serpentine, by boring holes obliquely, etc. The fingering is now like that of the higher clarinets.

The Bass Clarinet.

Compass. The compass of the bass clarinet is the same as that of the higher clarinets in C, B flat and A, an octave lower, therefore, for the C bass clarinet, thus:

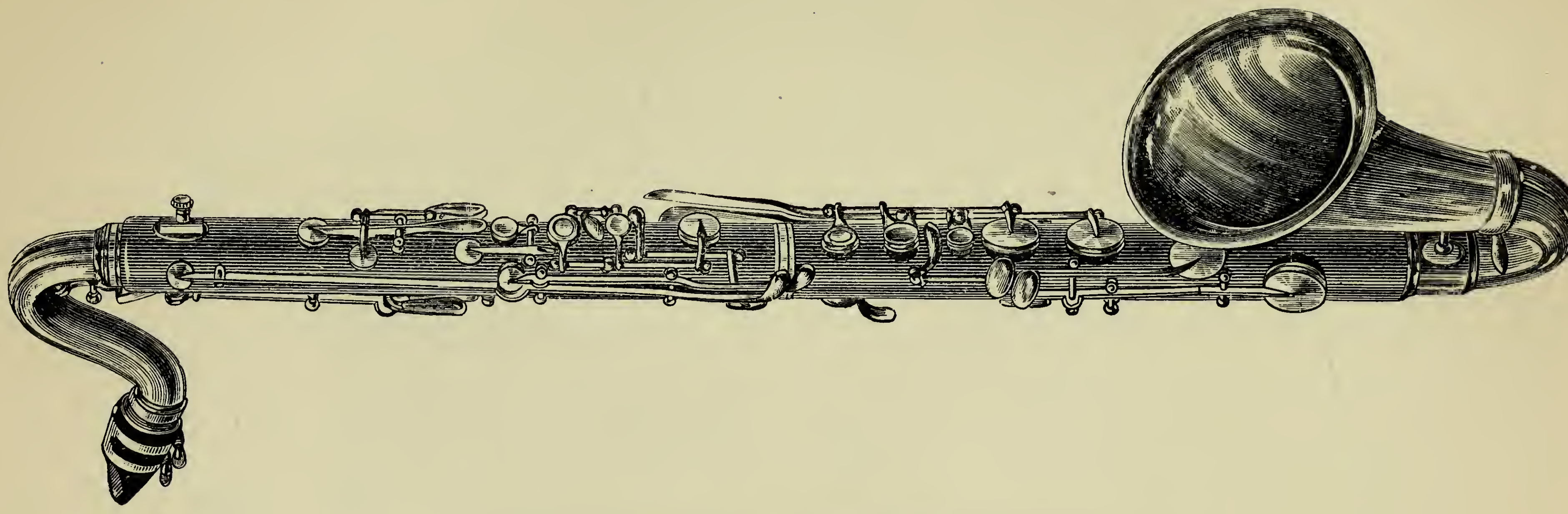
Both bass and treble clefs are used in notation; when the latter is the case, it must be understood that the notes sound for the B flat clarinet a major ninth below, for the A a minor tenth below the written notes; but when the bass clef is used, the transposition is only one tone and one and a half tones respectively. The B flat and A bass clarinets are the most used.

Quality of Tone. The quality of tone is less reedy than that of the higher clarinets; it rather resembles the bourdon stop on the organ. The tone is hollow and wanting in power, in the lowest register particularly.

Possibilities. The bass clarinet has the same possibilities as the treble clarinet, with the exception of the lowest octave, which is slow speaking, and chiefly used for sustained bass or melody notes, for the volume of sound makes rapid passages impossible.

Origin. The prototype of the bass clarinet is naturally the same as that of the clarinet, but the instrument in its present form (or nearly so), was invented in 1793, and the first instrument was made by Greser of Dresden. Halary and Adolphe Sax, of Paris, and Wieprecht, improved upon the original models in the first half of this century, but it is under Messrs. Besson and Co. and Messrs. Rudall, Carte and Co., that the instrument has reached its present state of perfection.

wrong



Bass Clarionet—front view. (*Messrs. Rudall, Carte and Co.*)

To face page 40.

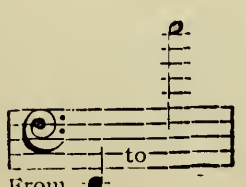
CHAPTER XI.

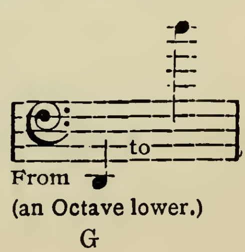
The Pedal Clarinet.

This is a comparatively new instrument invented by M. F. Besson (patented in 1891), which completes the quartet of clarinets as the double bassoon completes that of the oboes.

Construction. In principle of construction, this instrument resembles the clarinet; it consists of a tube 10ft. long, an ingenious combination of cylindrical and conical bore, doubled up at the lower end, which terminates in a metal bell. The mouthpiece at the other end is exactly like that of the other clarinets, but of a larger size, and it turns at right angles to the body of the instrument; it is furnished with a single reed. On the tube are 13 keys and 2 rings; the fingering being absolutely like that of the B flat clarinet except for the 8 highest semitones.

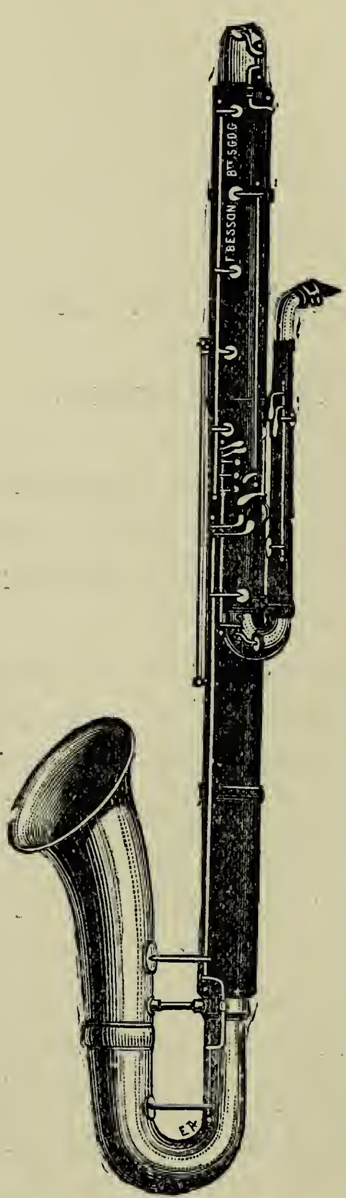
Compass. The normal compass of the pedal clarinet is as follows:

Written 

Real Sounds 

with an extended compass in the bass to B natural which will shortly be made available for practical purposes.

This instrument is in B flat, two octaves below the B flat clarinet. As it is a transposing instrument, the music



The Pedal Clarinet.

must be written for it in a key a tone higher; and to avoid using many ledger lines, an octave higher besides. The bass or F clef is used in notation.

Quality of Tone. The tone is rich, full and powerful; the very lowest notes being unavoidably a little rough in quality, but much more sonorous than the corresponding notes on the double bassoon. The upper register resembles the chalumeau (lower) register of the B flat clarinet in quality, being full, reedy and sweet.

This instrument is used as a fundamental bass of the wood-wind music at Kneller Hall. At Covent Garden, during seasons of German opera, it has been used with great success to accompany such passages as the Fafner and Hunding music in the "Nibelungen Ring."

History. Attempts were made by Sax and Wieprecht to construct contra-clarinets; but as they did not answer the purpose for which they were made, they were discarded. A contra-clarinet in F, was made by M. Albert, of Brussels, in 1890, an octave below the basset horn. Pedal clarinets, however, differ from all these in design and results.

CHAPTER XII.

The Saxophone.

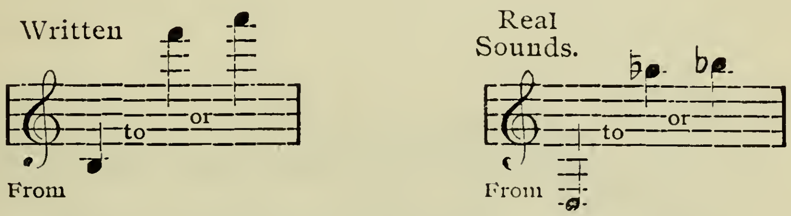
French, Saxophone. *German*, Saxophon. *Italian*, Sassofone.

The Saxophone belongs to the clarinet family on account of its single-reed mouthpiece, but it cannot be classed as a wood-wind instrument, being made of brass.

Construction. The saxophone resembles the bass and pedal clarinets at first sight; but its tube is *conical*, whereas that of all clarinets is *cylindrical* (except for the bell-joint in the bass and pedal models). The saxophone, then, consists of a wide bore conical brass tube, doubled up near the bell, which is shaped somewhat like a gloxinea flower. The mouthpiece end is bent at right angles.

Production of Sound. The saxophone has from 18 to 20 keys; the fingering is similar to that of the flute and the oboe. The first 15 semitones are obtained by opening successive keys, the rest of the compass by means of the octave keys. The saxophone may, therefore, be termed an octave instrument. (See chapter on flute).

Compass. The compass of the various saxophones extends over two octaves and a fifth, with all chromatic intervals. The chief saxophones are the soprano in B flat; the alto in E flat; the tenor in B flat and the bass in E flat or B flat. All these are transposing instruments, and the music for them has to be written in a correspondingly higher key; for instance, B flat being one tone below C (the standard for all transposing instruments), its music must be in a key one tone higher than that of the composition. As the alto in E flat is most used, its compass will be given here.



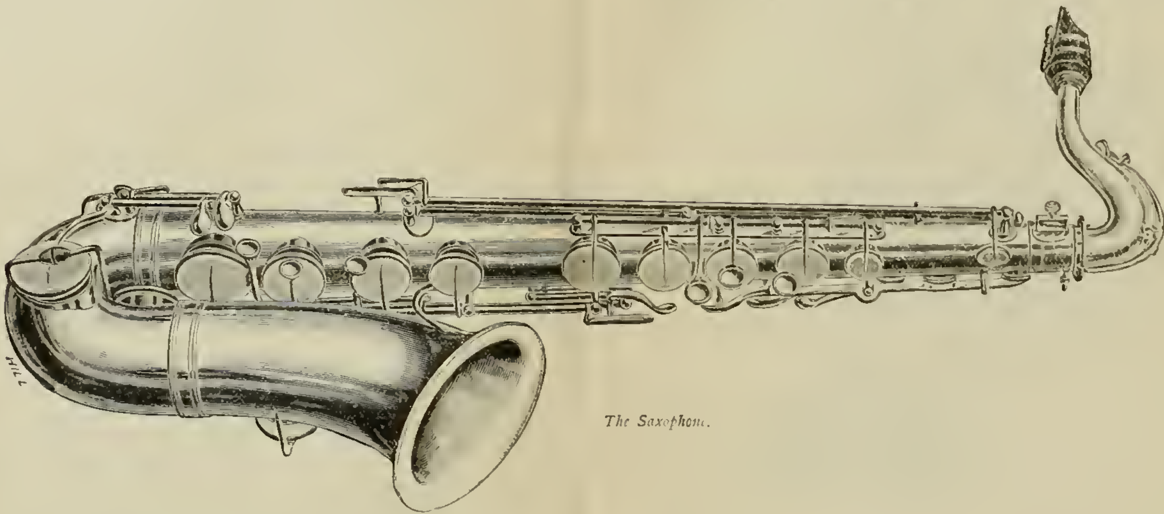
The treble or G clef is used for all instruments; the real sounds of the bass and contra-bass saxophones being two octaves lower than the written notes.

Quality of Tone. The tone is inferior to that of the clarinet in quality, and is something like that of the harmonium. Berlioz says of it: "it is soft and penetrating in the upper registers, full and rich in the lower, and in the medium, profoundly expressive; it has vague analogies with the 'cello, clarinet and cor anglais, with, however, a brazen tinge."

Possibilities. It is possible to play on the saxophone sustained notes, crescendo and diminuendo; scale passages, diatonic and chromatic; and it is an easy instrument to play.

Origin. The idea of using a single reed mouthpiece, with a conical tube, is due to a clock maker of Lisieux, "Desfontenelles," who, in 1807, made a clarinet with a conical bore, and a bell turned vertically upwards. In 1840, M.

Sax, in trying to produce a clarinet which would overblow an octave, like a flute, instead of a 12th, discovered the instrument which he has named the saxophone, and which, as yet, is not used in orchestras in England. Modern French composers, Meyerbeer, Massenet and Ambroise Thomas amongst others, have scored for it in most of their works. Kastner introduced it into the orchestra in 1844, at Paris,



The Saxophone.

in his opera, "Le Dernier Roi de Juda." Its value as a solo instrument, supported by trombones or by the cor-anglais, as in the ghost-scene in Thomas' "Hamlet," is great; for it produces just the weird impression appropriate to the situation. The saxophone is greatly used in military bands in Belgium and France, where it has quite superseded the bassoon, and partly the clarinet.

CHAPTER XIII.

BRASS WIND.

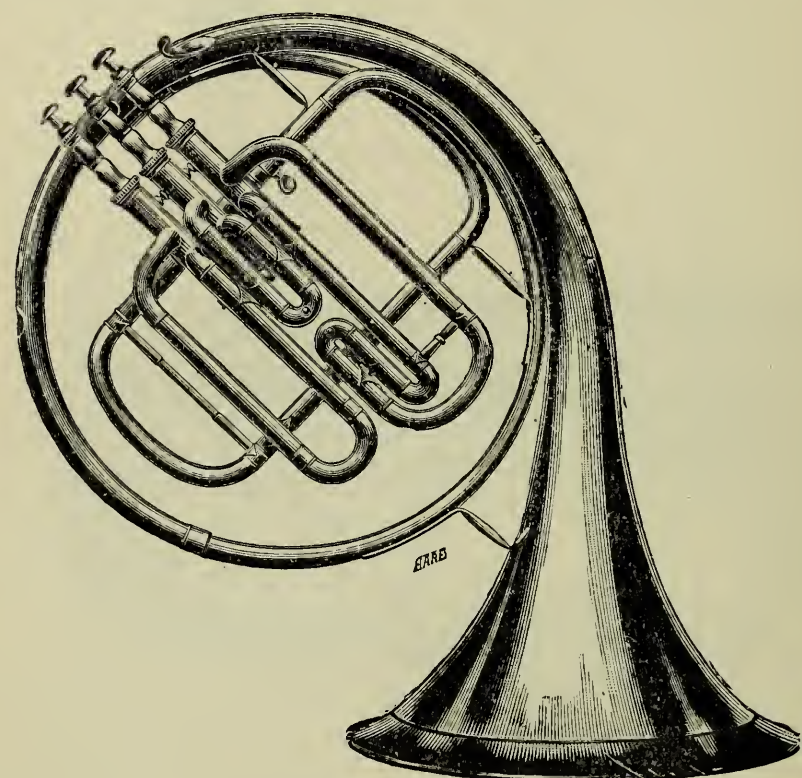
The French Horn.

French, Cor de Chasse. *German*, Waldhorn. *Italian*, Corno.

The French horn belongs to the class of brass wind instruments of which it is one of the most characteristic and difficult to master.

Construction. The horn consists of three principal parts: (1). The *body*, 7ft. 4in., in length, a conical brass tube folded round spirally, and ending in a large wide-mouthed bell. (2). The *crooks*, interchangeable spiral tubes of different lengths, each altering the pitch and key of

the instrument; when the longest crook, the B flat basso is used the inclusive length of the tubing is about 17ft. (3.) The *mouthpiece*, made of brass or silver in the shape of a funnel, to which the horn chiefly owes its softness and richness of tone, and quite unlike that of any other instrument in use in orchestras, except the cornophone and the Wagner tubas (included on account of their names with the other tubas). Across the ring



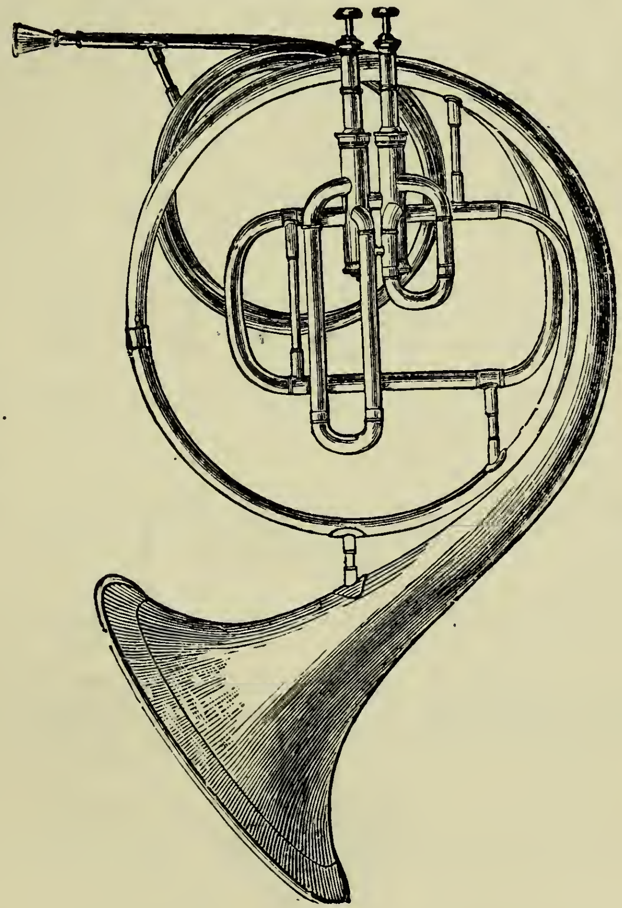
The French Horn. Roux Model.

formed by the body is a pair of slides, each shaped like a capital U, fitting tightly into each other, which are used to tune the instrument, and as a compensator with the crooks. The three valves or pistons (sometimes only two) which are now to be found on most horns, are attached to these tuning slides and to the body, and have greatly lessened the enormous difficulties the horn players experienced to obtaining notes all strictly in tune and of an even

quality; particularly as the instrument is so susceptible to changes of temperature, that a cold crook suddenly put on often causes the first few notes to be flat.

Production of Sound. The natural or open notes on the horn are not formed by closing or opening finger-holes by means of keys, as in the clarinet, oboe, etc.; they entirely depend upon, *firstly*, the length of tube used (additional

French Horn with 2 Pistons. Raoux Model. Kneller Hall Pattern.



length producing deeper pitch), this length being varied by means of the crooks, which are named after the fundamental or prime notes they give out. *Secondly*, upon the tension of the muscles of the mouth and lips and the increased pressure of breath, by which means the upper partial harmonics of the prime note are produced; the greater the tension, the higher the pitch; this method of producing notes is called *overblow-*

*ing.** *Thirdly*, upon the valves mentioned above, which, when depressed by the fingers, produce supplementary notes by lowering the pitch of the instrument and of any crook in use at the same time; for the first valve one tone; for the second a half tone; for the third one-and-a-half tones; two or more valves may also be used simultaneously to lower the pitch still further. These valve notes are almost equal in quality to the natural, particularly in the medium register. Another means of lowering the pitch of the horn a tone or a semitone respectively, is to insert the open hand right up the bore of the horn, or to insert it into the bell only; this method, which gives a muffled, veiled tone to the notes thus closed, is only used now when that peculiar, mournful, damped tone is required for effect; it was discovered in 1770 by Hampel, a horn player in Dresden, and is called *bouché* or hand stopping.

Compass. The nominal compass of the horn with crooks is from 16ft. C

Actual Sounds
for
C Basso Horn.

but that low C, which is the real fundamental tone of the horn, can rarely be produced and the effective register begins with 8ft. C.

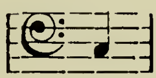
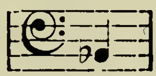
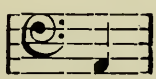
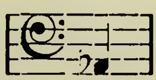
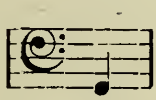
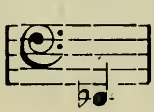
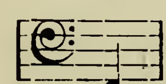
With three valves, therefore, the usual compass on the B flat bass might reach as low as

actual sounds.)

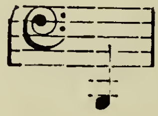
* A term now also applied to excessive blowing on brass instruments, producing an objectionable blare.

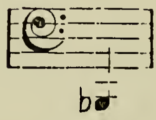
but the two or three notes of both extremities are seldom used. The music for the horn is always written in C, the treble and the bass clefs being used in notation. The composers indicate the key or crook in which the horn is to play, but the performer often transposes for himself, when he can more easily produce by valves the open notes written for the old hand horn.

It is usually easier to produce low notes on the higher crooks and high notes on the lower crooks, but a great deal depends on the diameter of the mouthpiece used, and on the lip of the player. The chief crooks in use at present are eleven in number, *i.e.*,

C alto		rarely used.
B flat alto		lowers the pitch 1 tone.
A		lowers the pitch $1\frac{1}{2}$ tones.
A flat		lowers the pitch 2 tones.
G		lowers the pitch $2\frac{1}{2}$ tones
F		lowers the pitch $3\frac{1}{2}$ tones.
E		owers the pitch 4 tones.
E flat		lowers the pitch $4\frac{1}{2}$ tones.
D		lowers the pitch 5 tones.

C Basso  lowers the pitch 6 tones (1 octave).

B Basso  lowers the pitch 6½ tones.

B flat Basso  lowers the pitch 7 tones.

The harmonic series on the horn, that is to say the open notes which are possible on each crook (without using the valves) are:

As written 

(Very difficult)

The horn is a transposing instrument.

Quality of Tone. The timbre of the horn is mellow, sweet and sonorous, having none of the vibrating, metallic sound of most other brass instruments with cup-shaped mouthpieces. The timbre of the piston notes is slightly different, being more resonant, partaking a little of the character of the trombone. For this reason both the natural and the valve-horn are often found in the same orchestra as a gain in tone-colour results. Great masters in orchestration so choose the keys of the four or eight horns for which they are scoring, as to use the greatest possible number of open notes, these being the most valuable. The horns generally play in pairs, the 1st and 3rd, and the 2nd and 4th; yet composers frequently use horns in four different keys.

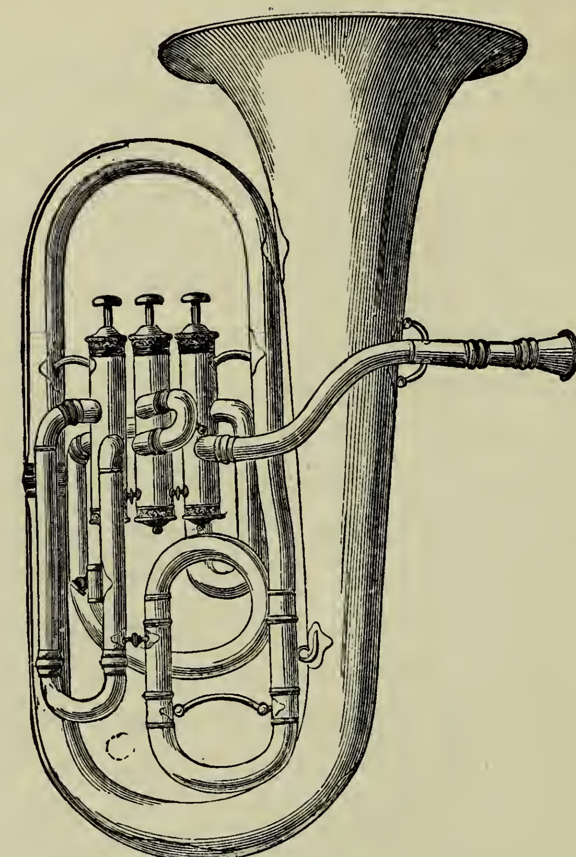
Possibilities. It is possible to play on this instrument sustained notes, diminuendo and crescendo; diatonic and

chromatic scale and arpeggio passages, both legato and staccato; grace notes and shakes; the latter are only advisable in the medium register.

Origin. The horn is of very ancient origin. It was known in Egyptian, Assyrian and Indian civilizations, and is to be found depicted in painting and sculpture on ancient temples, monuments, etc. The Schofar of the Israelites was a "wether horn," as Rabbi Jehuda tells us in a treatise, and Rabbi Levi says: "It must be bent near the bell." This ancient instrument is still used in synagogues now-a-days, at certain seasons of the year. The Roman buccina or cornu, was a brass tube of great length, curved round spirally, like the modern Helicon, but with a narrower bore, and worn like it round the performer's body; it gave the same harmonic series as the modern horn, and like it could not sound the fundamental tone on account of its small mouthpiece. Horns were with other instruments, imported into Europe by the Moors and the Crusaders; of those horns, the *Oliphant* or "Roland's horn," was the most ancient. Specimens of this instrument from the 14th century are extant; but we know that the Franks were familiar with the horn before the battle of Roncesvalles, 778 A.D., for Roland blew mighty blasts upon it to call Charlemagne to his assistance. Drawings of the *Oliphant* may be seen in the Cotton MSS. at the British Museum. This primitive horn continued in use for hunting calls, till it finally, in the 17th century, developed into a spirally bent brass tube with a large bell, and was worn round the body so as to leave the hands free. The natural horn was first introduced into an orchestra in England (under strong protest) in 1720; in France in 1757, and earlier in Germany, as Bach frequently scored for it. In 1815 pistons were invented in Prussia, and were speedily adapted to most brass instruments. Schu-

mann was the first to introduce the valve-horn and valve-trumpet into the orchestra.

The Tenor Horn.



CHAPTER XIV.

The Cornophone.

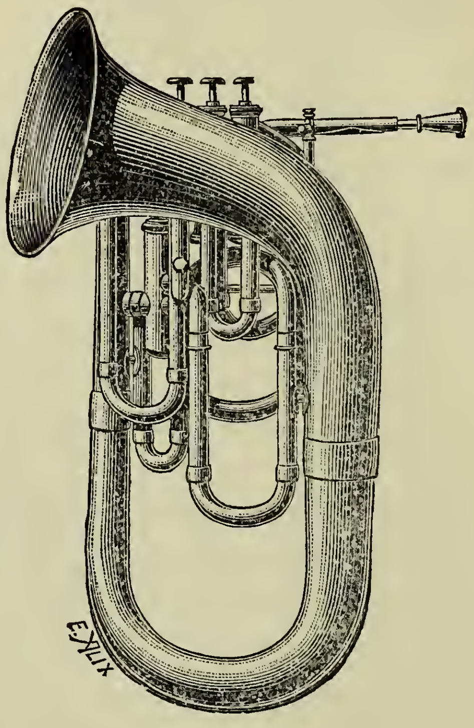
Construction. This is a comparatively new instrument patented by M. F. Besson, belonging, by its funnel-shaped mouthpiece, its conical bore with parabolic bell and its crooks tuned to divers keys, to the *horn* family. It has, however, the three pistons, compensating and tuning slides of the cornet and its *fingering*. Instead of the tube being coiled spirally, it has the oval form of the bass flugel-horn.

Production of Sound. The notes are obtained by means of overblowing, *i.e.*, by the varied tension of lips and pressure of breath, which produce the upper partial harmonic series—the greater the tension of the lips, the acuter the pitch of the notes.

Harmonic series. (The same as for the horn.)

The three valves lower the pitch of any note played while the pistons are depressed, for the first, one tone; for the second, a half tone; for the third, one-and-a-half tones.

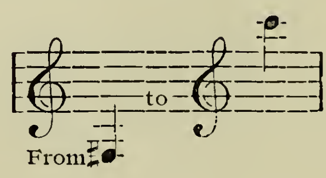
Any two valves may be used conjointly to lower the pitch still further. Crooks in B flat, E flat or F, and tenor B flat are used with the cornophone.



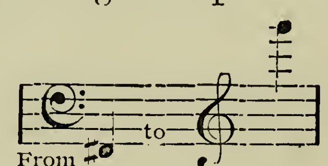
The Cornophone.

Compass. The compass of the cornophone with three valves is:

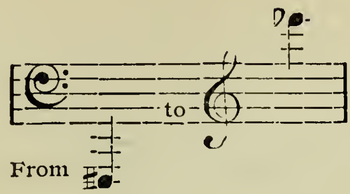
Normal compass



and with extension pedal notes and upper partials obtainable by a player with a good lip



A cornophone in B flat with four valves (the fourth lowering the pitch two-and-a-half tones) has the following compass:



The bass and treble clefs are used in notation. It is a non-transposing instrument, thus differing from the horn; the music for it is written as sounded.

Quality of Tone. The tone resembles that of the French horn, but it is a little sharper and more reedy in quality. The chief advantage of the cornophone is, that with or without crooks a large compass can be obtained *strictly in tune,* and the fingering is comparatively easy.

Possibilities. It is possible to play on this instrument, scale and arpeggio passages, both diatonic and *chromatic,* with the greatest rapidity; sustained notes, crescendo and diminuendo; shakes, turns, etc., as on the cornet.

CHAPTER XV.

The Tubas.

French, Tubes. *German,* Tuben.

Under this name are comprised at the present day, instruments of two distinct families—(1) The modern development of the bombardon and euphonium, which are really the bass saxhorns, having four or five pistons, of which one is set horizontally and the rest vertically in the instrument. In the older form of bombardon the pistons were all horizontally set. (2) The Wagner tubas—the tenor or tenor-bass scored for by him in his "Nibelungen Ring," and other dramas; these instruments belong, by their mouthpiece, to the horn family, and differ from the bass tubas or bombardons in that they are played with a funnel-shaped instead of a cup-shaped mouthpiece, which makes them really basses of the French horn.

The saxhorn family has a cup-shaped mouthpiece, producing a quality of tone between that of a horn and a trombone.

The Euphonium.

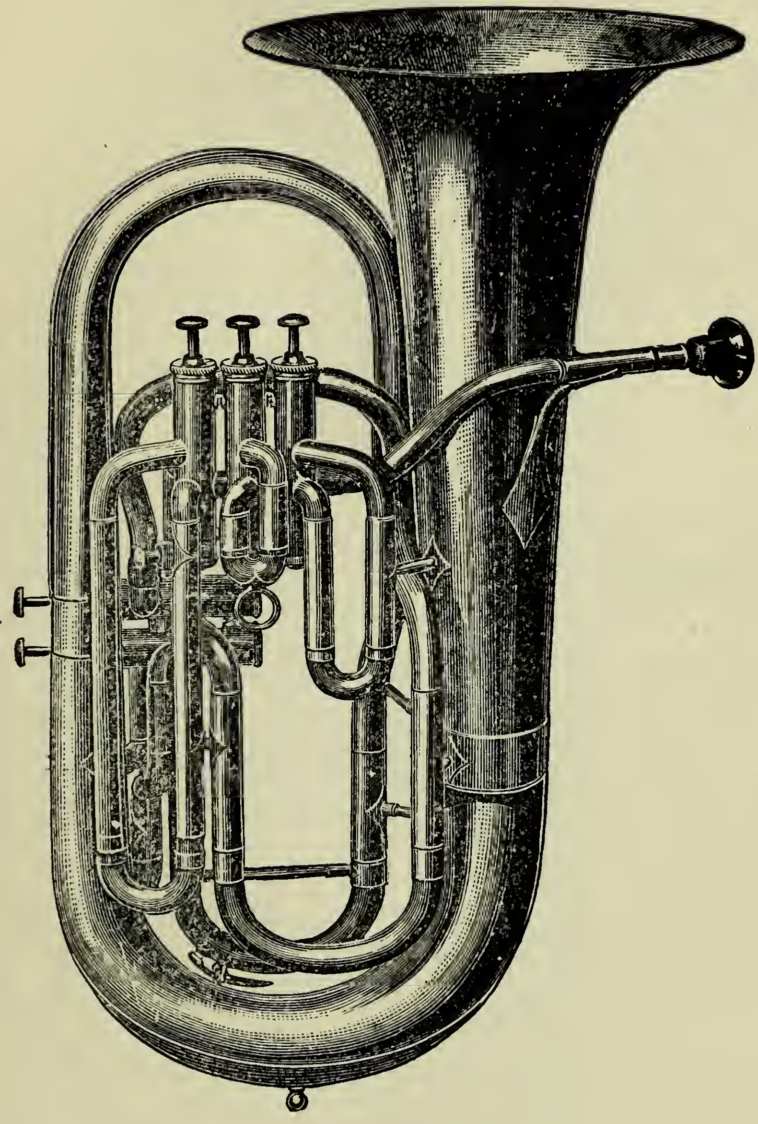
French, Baryton. *German,* Tenor Tube.

Called in the orchestra, Tuba; in a band, Euphonium.

Construction. This instrument consists of a wide-bore conical brass tube, ending in a wide-mouthed bell; it has

a cup-shaped mouthpiece. Most euphoniums are made with four or five pistons; one horizontal and three or four vertical.

The Five-valve Euphonium.



Production of Sound. By the varied tension of the lips across the mouthpiece, as for the trumpet, trombone, etc., the harmonics or natural open notes are obtained by over-blowing. The intervening notes are produced by means of the valves, which by opening a passage into additional tubes, deepen the pitch one, half, one-and-a-half, two-and-a-half tones, respectively; the horizontal valve, worked by

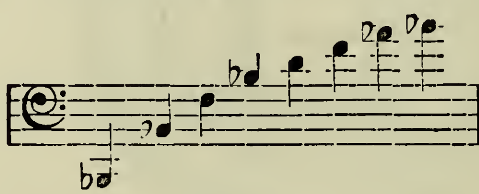
Most euphoniums only have three pistons.
and a piston for altering the [illegible]

the left hand, is used to make the lower notes strictly in tune, and opens a passage into a compensating tube.

The Cup-shaped Mouthpiece.

Compass. The bass or F clef is used in notation. The euphonium is treated by some composers as a transposing instrument, but usually the real notes are written. There are euphoniums in C and in B flat; the latter is the most used. This instrument gives out the fundamental tone readily, but no harmonics above the 8th, viz.:

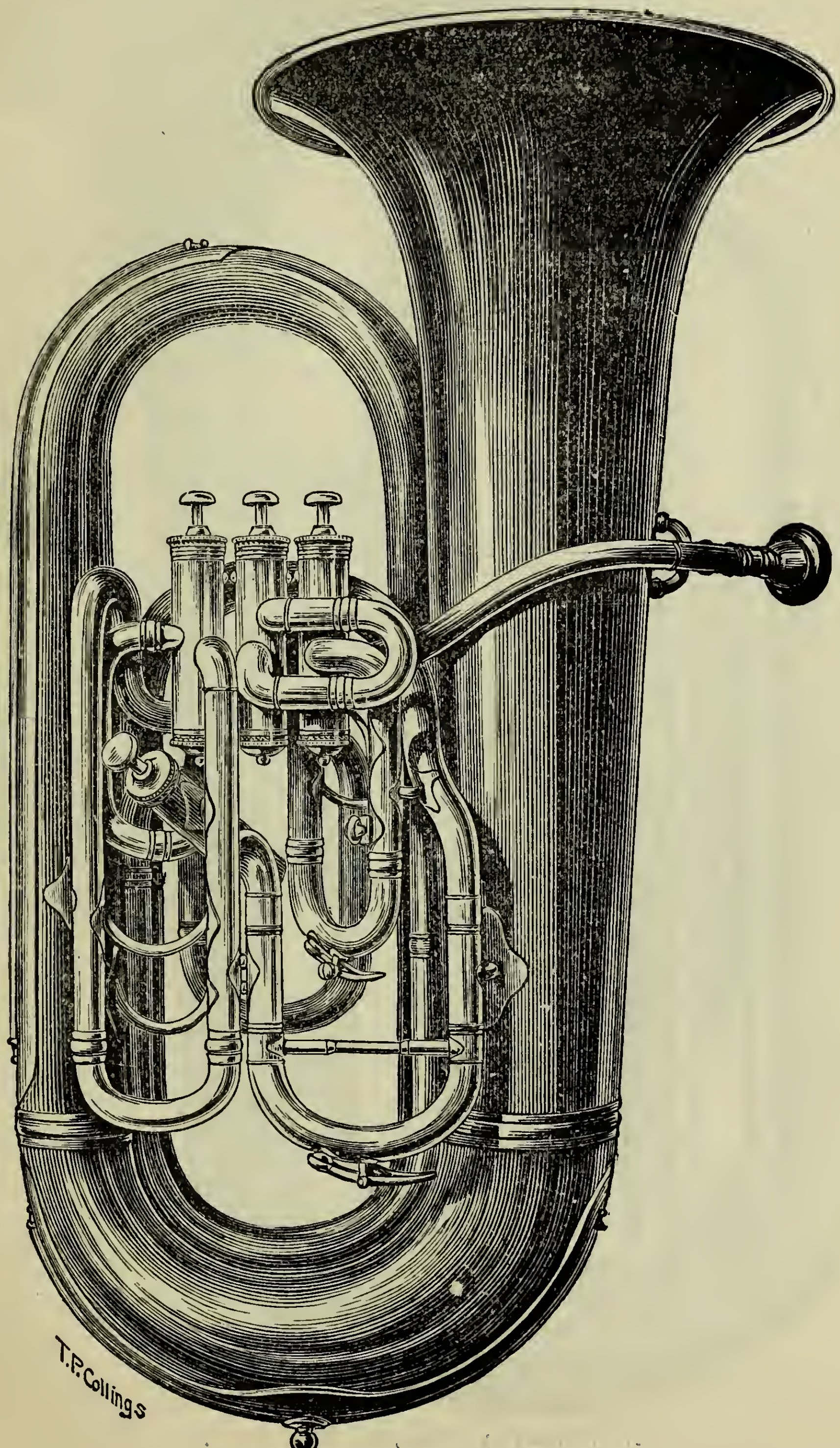
Euphonium in B flat. Harmonic Series.



By means of all the valves used at once, the B flat an octave below can be reached, giving a compass of four octaves.

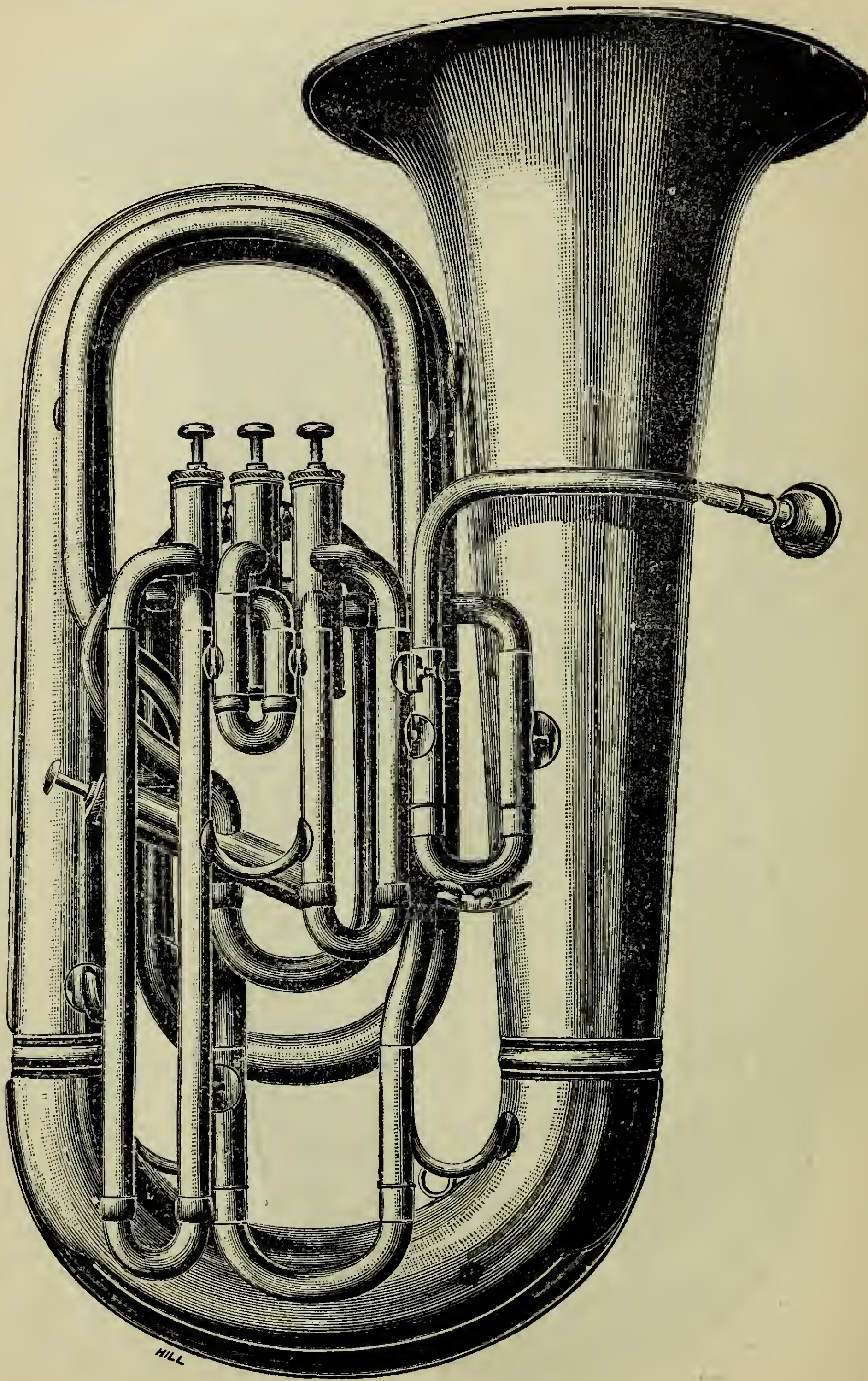
Quality of Tone. The quality of tone is rich, noble and

powerful, harmonising well with that of the trombone, and speaking readily in the lower registers, but slowly of course, owing to the long dip of the pistons.



Short Action Bass.

Possibilities. It is possible to produce diatonic and chromatic scale passages, in moderate time; sustained notes,

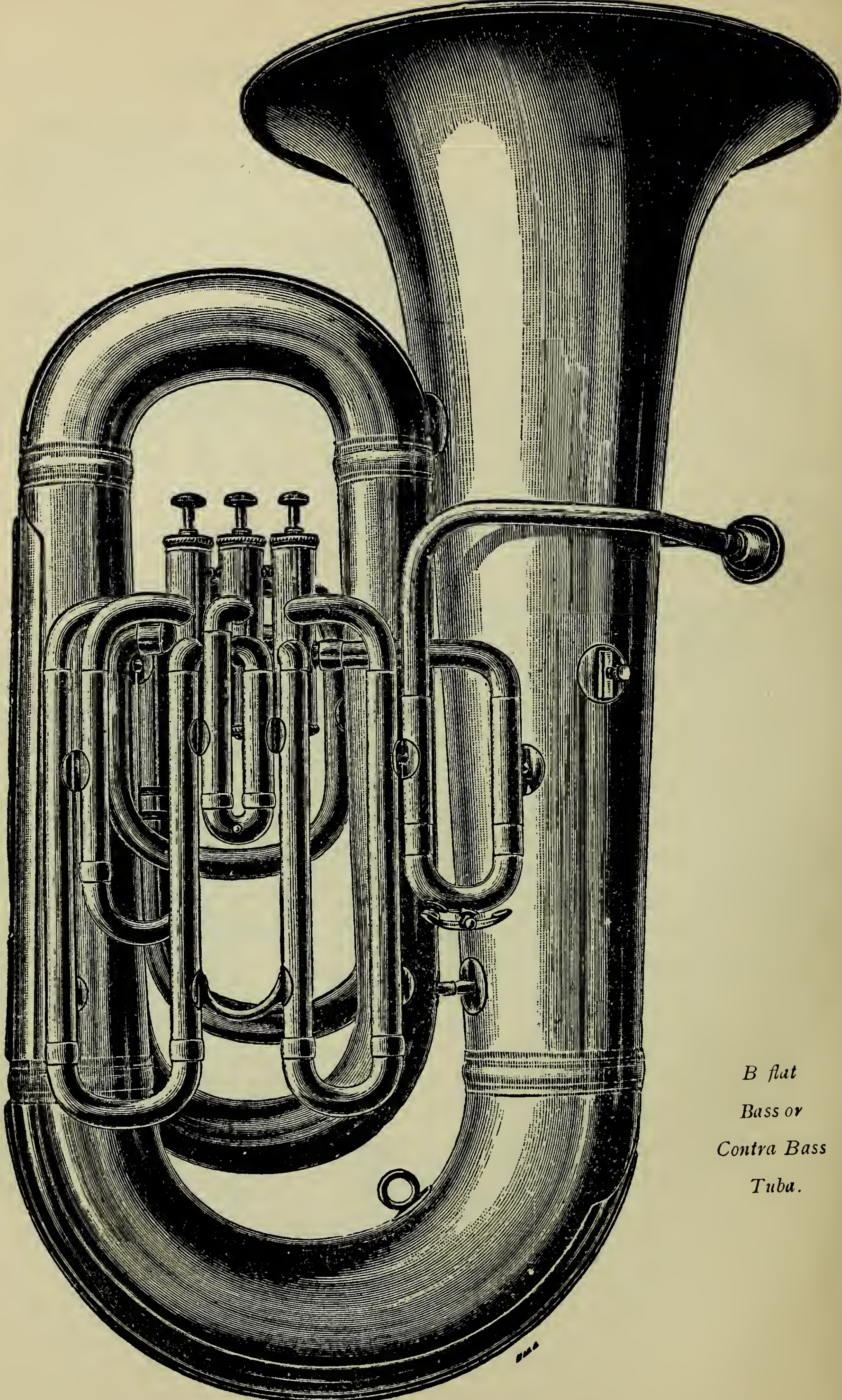


Bombardon 4 Valve, or Bass Tuba.

diminuendo and crescendo; legato and staccato effects. With the new short-action piston instruments (patented by Messrs. Rudall, Carte and Co.), the dip of the piston being half that of the old instruments, the player is able to execute rapid passages as on the cornet.

Origin. This instrument is of modern invention, it is sometimes wrongly regarded as a member of the saxhorn family, invented by M. Sax, of Paris, from which, however, it differs by the proportions of the bore. Owing to the smaller calibre of the bore, the fundamental, together with the pedal notes obtainable by means of valves, cannot be produced for practical purposes on the saxhorns, whereas they are effective on the tubas.

The compass given above (p. 60) is the extreme theoretical one. In practice D or E flat is the lowest effective note on the four-valve B flat euphonium and E or F on the three-valve instrument. The prototype of this instrument is the keyed-bugle, invented by Halliday in 1810. For this reason, it is only scored for by modern composers. In military bands it is a great favourite. The euphonium is the 'cello of the brasses, and blends equally well with reed or brass. It is too large an instrument to admit of tonguing (see Flute). To it are given either a melody or a bass; sometimes a counterpoint subject with the bassoon and horn.



B flat
Bass or
Contra Bass
Tuba.

CHAPTER XVI.

The Bass Tuba.

Bombardon.

Construction. This instrument and its contra-bass variety are constructed exactly like the euphonium (of which they are the basses), with four or five valves, lowering the pitch respectively 1, $\frac{1}{2}$, $1\frac{1}{2}$, $2\frac{1}{2}$ tones, the fifth valve acting as a compensator to obtain the low notes strictly in tune. The bass-tuba gives out the same harmonic series as the euphonium, and is in E flat or F for the bass, and C, or even B flat for the contra-bass; that is an octave below the euphonium. The deeper the pitch of these brass instruments, the longer and wider the conical tube of which they consist. The euphonium is $26\frac{1}{2}$ inches high, with a bell measuring $9\frac{7}{8}$ inches across. Whereas the monster contra-bass tuba is 40 inches high and its bell measures 16 inches across.

Compass. The compass is the largest low compass in the orchestra.

The Helicon or Contra-Bass.

Practically the same Instrument as the B flat Contra-Bass. Its construction is better adapted for military bands.

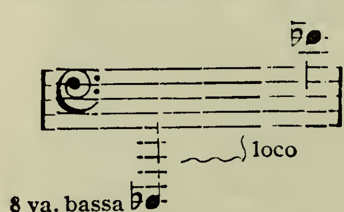
Bass E flat.

Contra-Bass B flat.

Harmonic Series.

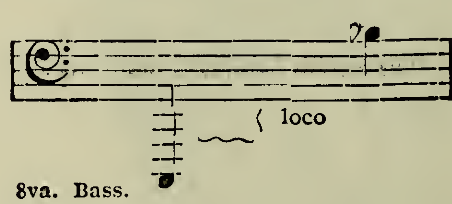
This compass is extended nearly an octave lower by using all four valves together. Higher harmonics are possible to a first-rate player with a good lip; the lower notes produced by the valves can hardly be heard unless doubled an octave higher by another tuba. A complete chromatic scale throughout its compass is to be obtained.

Compass of the Bass Tuba in E flat or F.



or higher still for first-rate player.

flat B



The bass clef is used in notation. These tubas are generally treated as non-transposing instruments, the music being written as sounded, except in France and Belgium, where the music for them is transposed.

Quality of Tone. The tone is most sonorous, rich, and of immense power, partaking of that of the organ and trom-

The Helicon or Circular Contra-Bass Tuba in B flat.

L

bone. The bass tuba corresponds to the double-bass in strings, and to the pedal-clarinet and double-bassoon in reeds. A beautiful effect is produced by playing piano and pianissimo on this instrument. Wagner uses these instruments extensively in his dramas, in the *Nibelungen Ring* especially. The name of bombardon is still used now for the bass tuba in military bands. The older instrument of that name was made like a large tenor-horn, but with a cup-shaped mouthpiece and a less expanded bell; the cylinders were also differently set, being all horizontal: the bell was to the left of the player, instead of to the right as in the newer models invented by M. Sax. The name of helicon is given to the bass or contra-bass tuba in its circular form, worn round one shoulder, in military bands, which is a more convenient way of carrying the instrument when marching.

Wagner Tenor and Tenor Bass Tuba.

German, Tenor-bass Tube.

Construction. This instrument belongs to the valve horn family of which it is the bass. It consists of a conical brass tube with a wider bore than the horn, and a wider mouthed bell. This tube is not spirally bent, but more in the shape of the tenor horn (which see), or of the euphonium with a horn, or funnel-shaped mouthpiece; and the bell to the right of the performer.

Production of Sound. This tuba has four valves played with the left hand, which deepen the pitch for the bass tuba, respectively, 1; $\frac{1}{2}$; $1\frac{1}{2}$; 2 tones, and for the tenor tuba, $\frac{1}{2}$; 1; $1\frac{1}{2}$; 2 tones; which latter arrangement differs from that of all other valve systems. These valves help to form the intervening notes of the harmonic series, which lies between the 2nd and 12th upper partials; the funda-

mental tone being very difficult, almost impossible to produce. These open tones are produced by the varied tension of the lips across the mouthpiece, and by the pressure of breath called overblowing.

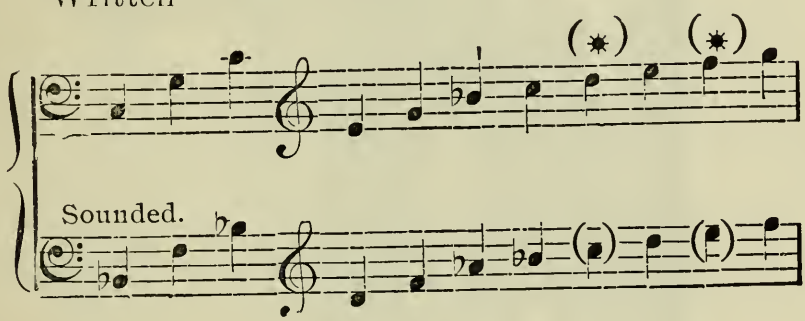
The tenor tuba is in B flat, and the bass in F, a fourth lower.

Compass. This is a transposing instrument, and its music, like that of the horn, is always written in the key of C. The bass and treble clefs are used.

Harmonic Series or Open Notes (Wagner Tubas).

B flat Tenor

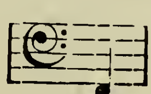
Written

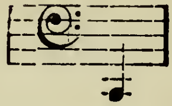


F Bass

Written

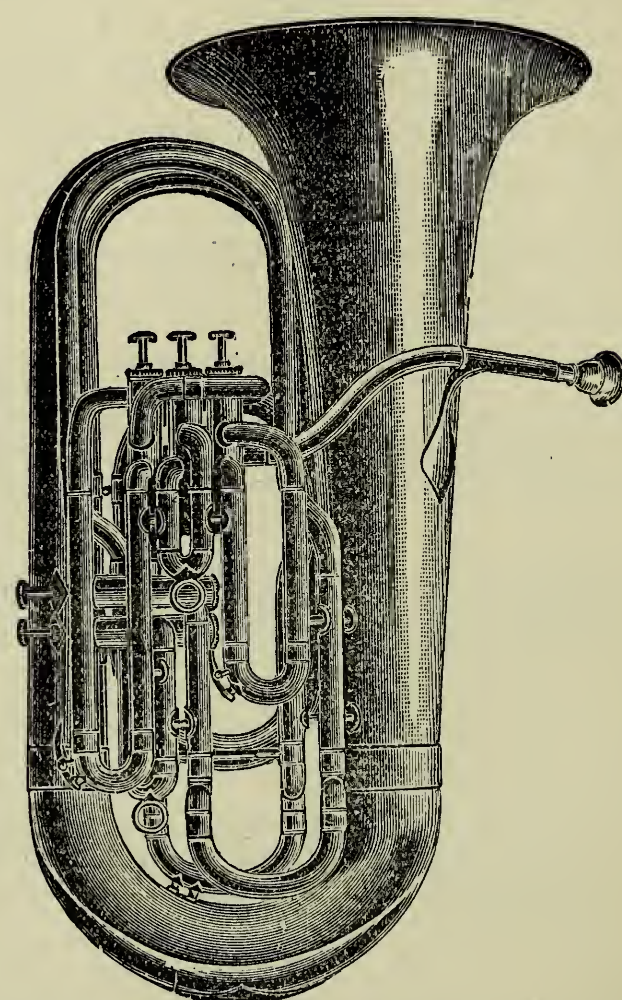
* The notes in brackets are difficult to obtain strictly in tune as open notes. By means of the valves the compass is extended downwards to

Real Sounds  for the tenor in B flat,

and to  for the bass in F,

with all chromatic intervals throughout the compass.

The Bass Tuba in F.

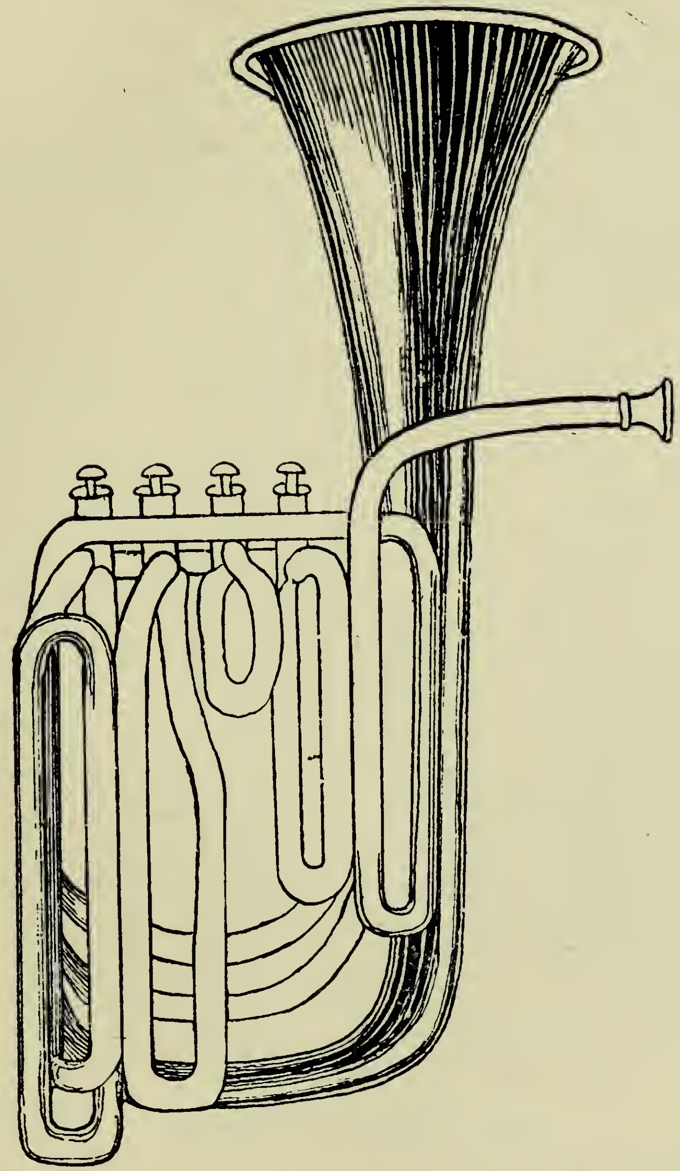


This illustration represents the Bass tuba, usually substituted for the Wagner Tuba in England

Quality of Tone. The quality of tone of the tenor instrument is similar to that of the valve-horn, but more metallic and therefore less pure and noble. The tenor-bass or bass in F is of a fuller and richer tone than the former, but of the same timbre. Wagner, instead of relying upon an instrument of different timbre like the trombone or eupho-

nium, had these horns constructed to complete the quartet of horns. The euphonium, however, is often substituted for the one, or the tenor-horn, for the other.

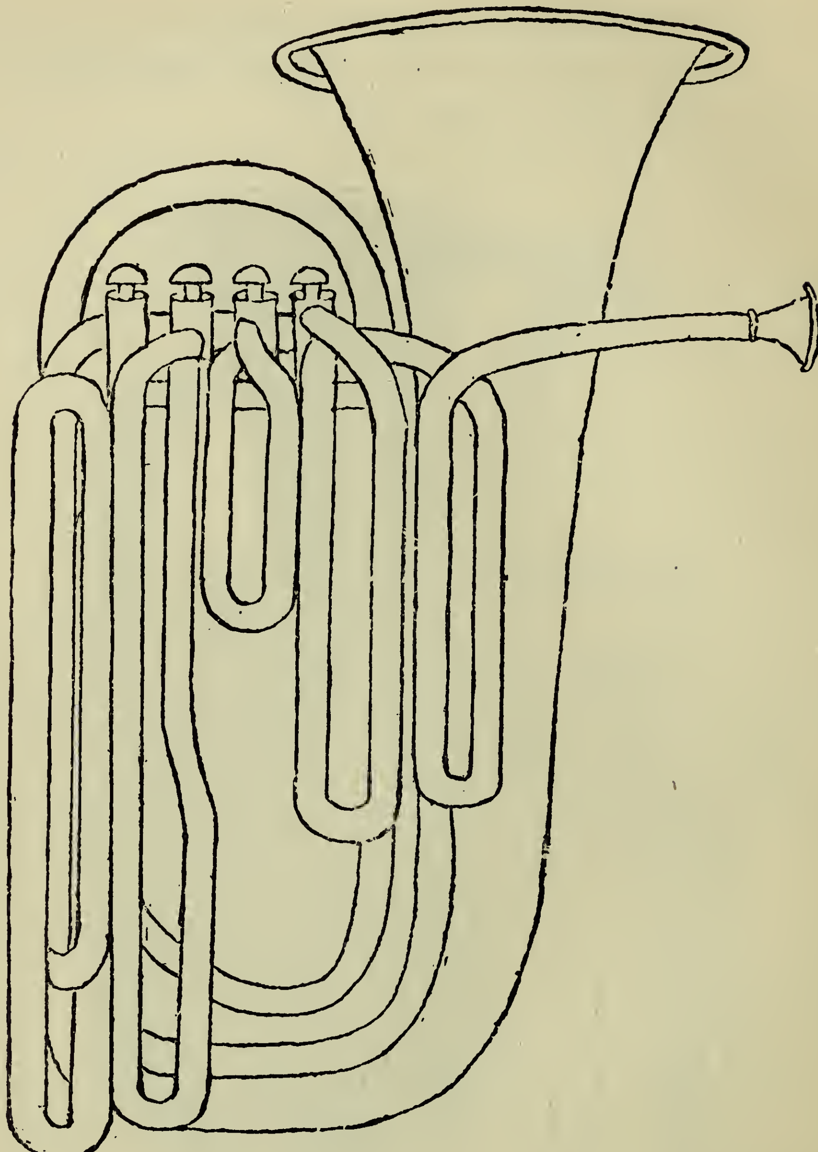
The Wagner Tenor-Tuba in B flat.



These Wagner Tubas were sketched for this work from Dr. Mottl's instruments by an amateur draughtsman.

Possibilities. Sustained notes, diminuendo and crescendo; rhythmical figures, legato and staccato; arpeggios in moderate time, etc., are possible on this instrument.

The Wagner Bass Tuba in F.



CHAPTER XVII.

The Trombone (Sackbut).

French, Trombone. *German*, Posaune. *Italian*, Trombone.

The trombone belongs to the class of brass instruments with cup-shaped mouthpieces.

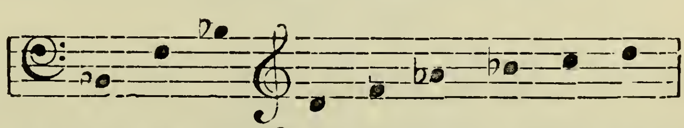
Construction. This instrument consists of a tube doubled

twice upon itself, with a wide bell at one end, and at the other a cup-shaped mouthpiece which varies in diameter according to the lip of the player (who choses one to suit him), and the pitch of the instrument. The bore is cylindrical except for the bell joint, in which it is conical. The tubes forming the middle section, or slide, are made double, and are connected at the lower end by a hemispherical tube. The outer tube, therefore, slides upon the inner, opening a greater length of tube proportionate to the depth of pitch required. The slide is held by a little bar across the upper portion, and is manipulated by the right hand.

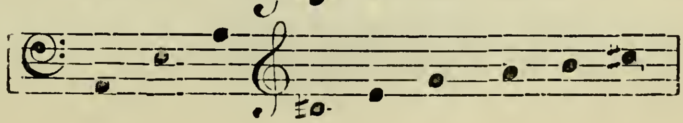
Production of Sound. Notes are produced on the trombone, as on the horn, by overblowing; that is by the varying tension of the lips and pressure of breath, which give the harmonic series as far as the eighth or tenth upper partial; the fundamental tone or pedal note is hard to obtain and ineffective (as in the French horn). There are seven positions of the slide on the trombone, each giving a fundamental tone and its harmonic series, a semitone lower than the last; these positions are made by pulling out the slide a little more for each one, the first position being that in which the slide remains closed. The performer on the trombone is just as dependent on a correct ear as the performer on stringed instruments is, for these positions are found *by ear.* Appended is a table of the harmonics in general use for the seven positions, and the reader will perceive that a complete chromatic scale can thus be obtained in much the same way as by the positions of the violin.

Seven positions on the B flat trombone (Tenor-bass).

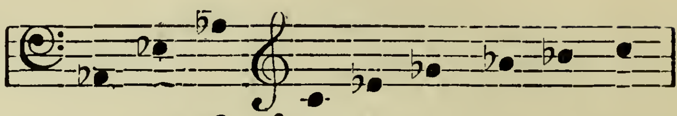
I. Position with closed slide.



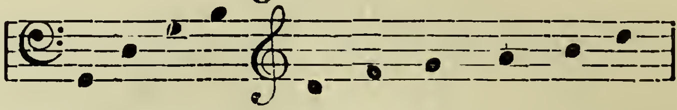
II. With the slide open about $3\frac{1}{8}$ inches.



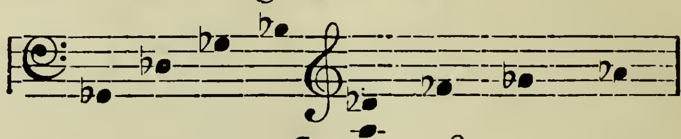
III. With the slide open about $6\frac{1}{2}$ in.



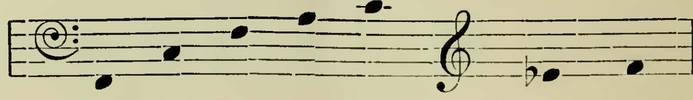
IV. About 10 in.



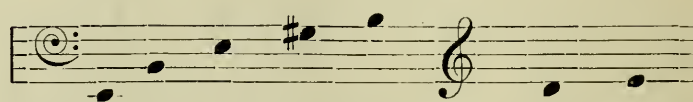
V. About $13\frac{3}{4}$ in.



VI. About $17\frac{3}{4}$ in.

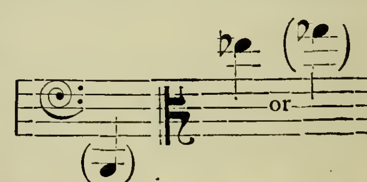


VII. About 22 in.

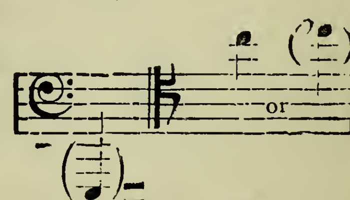


Compass. The compass of the trombone is two octaves and a sixth. It is a non-transposing instrument; the music sounds as written. There are four chief trombones used in orchestras. The compass of each is as follows:

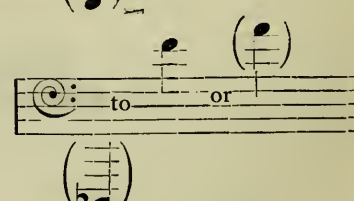
The Alto in F (or in E flat correspondingly lower).



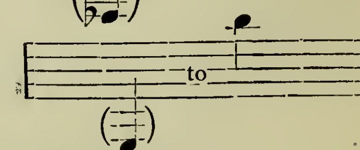
The Tenor or the Tenor-bass* in B flat.



The Bass in G (for the Bass in F or the Double Slide in E flat, correspondingly lower).

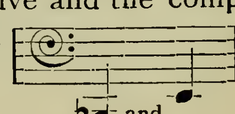


The Contrabass in B flat. An octave below the Tenor-bass.

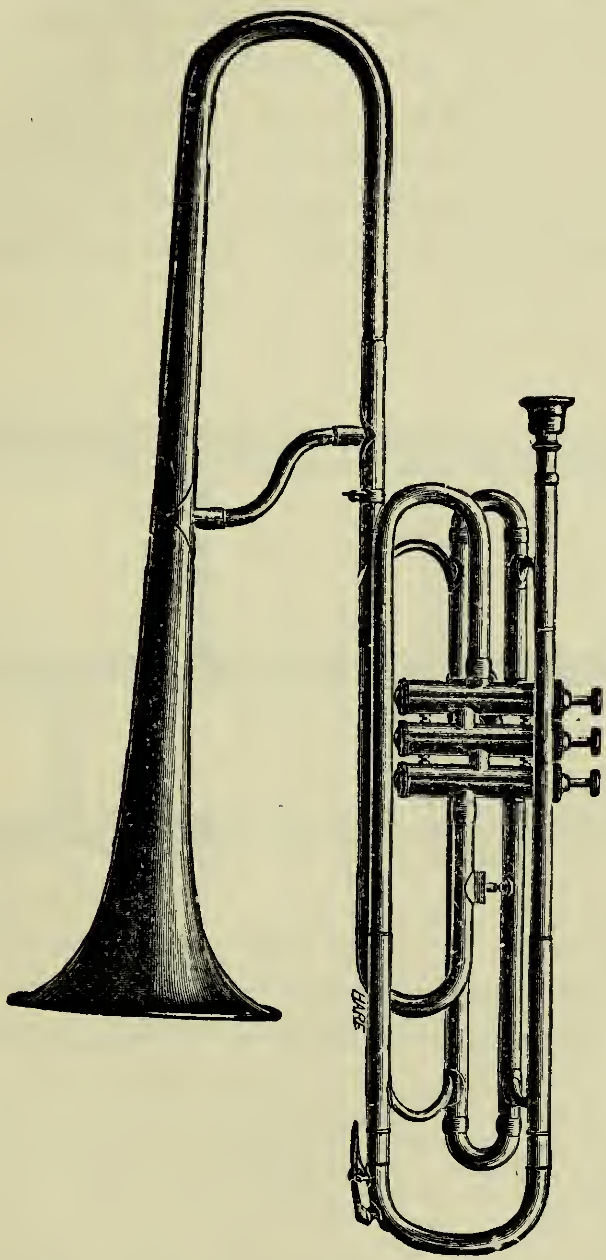


8va. bassa.

* The tenor-bass is of the same pitch as the tenor but the bore being wider, the fundamental and pedal notes are effective and the compass is thus extended downwards, but with a gap between



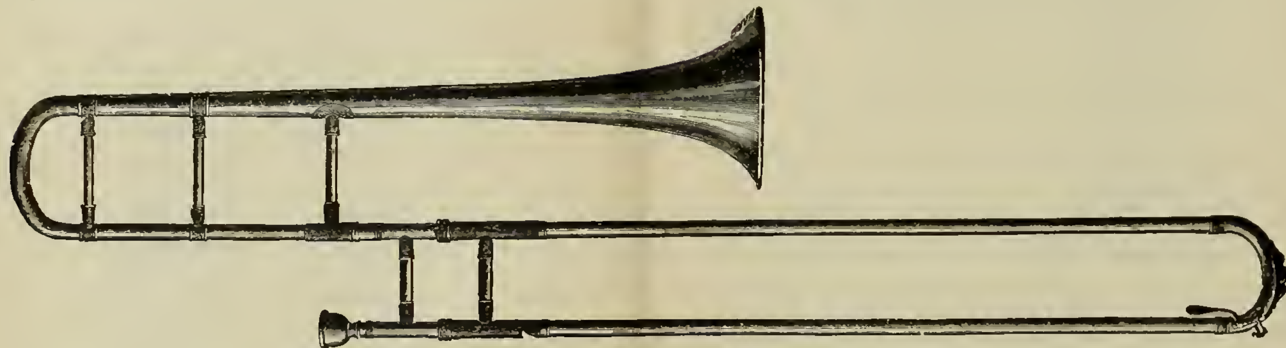
The compass given here is extreme, and includes the notes obtained by the slide; the notes which are in brackets are very difficult. The fundamental notes on these brass instruments



The Valve Trombone.

are not very much used, as their tone is less rich than that of the notes obtained by overblowing. The contra-bass is not much in request in concert orchestras, but Wagner has scored for it effectively in the "Nibelungen Ring."

Quality of Tone. This varies greatly in the different instruments and registers. The *alto* (seldom used now) stands in regard to timbre between the trumpet and the French horn. The tenor and tenor-bass are the most generally used of all trombones; they are of powerful and penetrating tone quality. The bass has a full, rich, sonorous timbre, suitable for heroic, majestic music. There are besides the slide trombone, which is most largely used, two others: (1) The *valve trombones* corresponding to the four above mentioned in keys, and built



The Tenor Trombone.

in the same manner with the addition of three valves, instead of the slide, which enable the performer to attain to a greater technical execution: but as the tone of the instrument suffers thereby, the valve trombones are little used in concert orchestras. (2) The *double-slide trombones** (patented by Messrs. Rudall, Carte and Co.), and made in B flat, G bass, and in F and E flat contra-bass, in which the extension of arm necessary in the bass instruments for the lowest positions is considerably lessened; greater nicety in the adjustment of the

* Invention ascribed to Halary in 1830.

slide is, of course, required to produce the requisite semitone positions in tune.

Possibilities. The trombone is capable of rendering sustained notes, diminuendo and crescendo; scales and arpeggios, except in the lowest registers and when the *tempo* is very quick. The legato style of playing is now dying out and giving place to the blare which is greatly to be regretted.

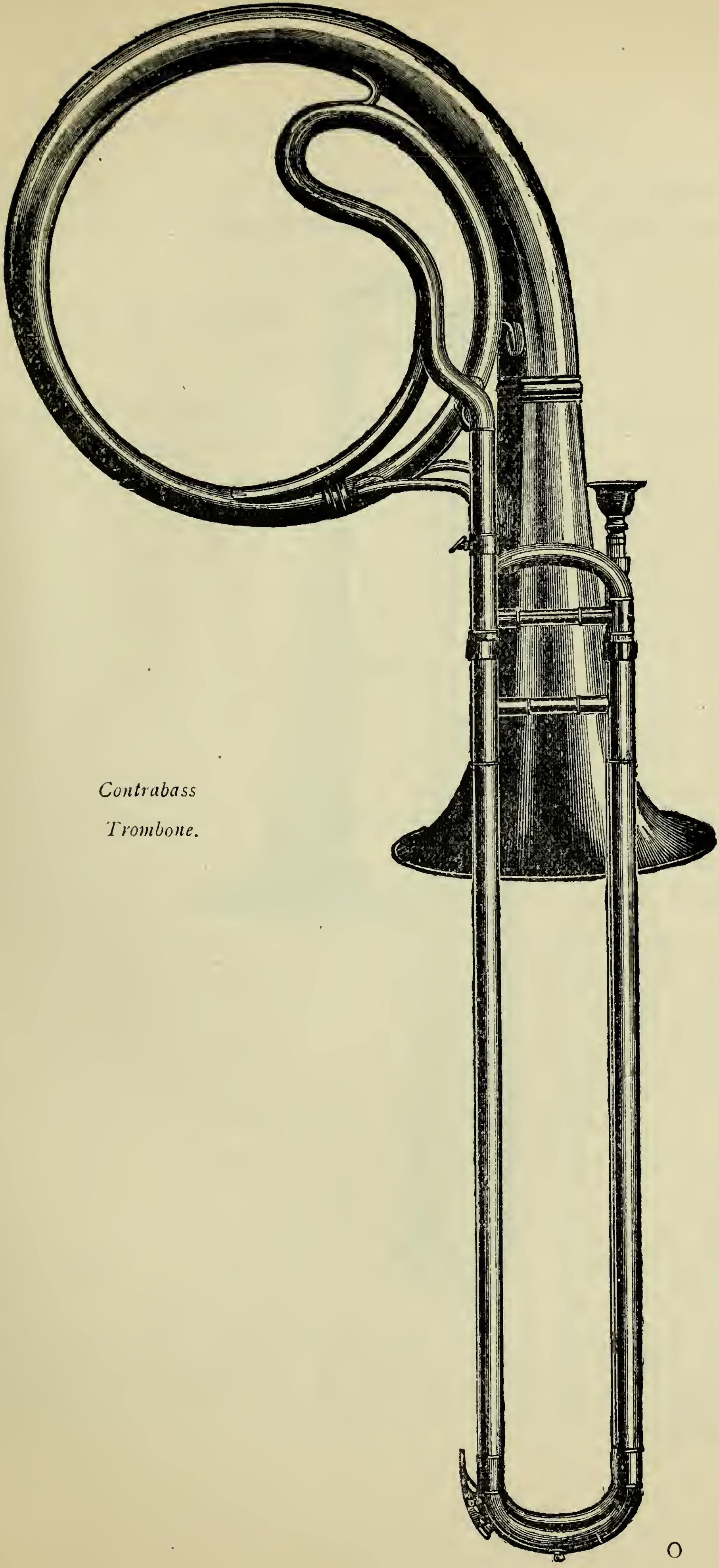
Origin. Trombone means in Italian, "large trumpet or tromba." The trombone family, being derived from the trumpet or *buccina*, is of great antiquity. The immediate predecessor of the trombone was the *sackbut*, the earliest form of *draw* or *slide* trumpet with a short slide giving at most three or four positions. The sackbut developed into the trombone with seven positions at the beginning of the sixteenth century, when we find that the Neuschels of Nuremberg made slide trombones quite as good as the modern ones. Many hypotheses have been advanced to explain the origin of the word sackbut, the following being the present writer's contribution: The word seems to be derived from the Spanish *sacabuche* through the French *saquebute*, but the earliest mention of the

instrument recorded in England is *shakbusshe** at the end of the fifteenth century, and *sackbut* appears at the beginning of the sixteenth century. The Spanish word is derived from *sacar*, to draw out, and *buk* or *buque*,† a Moorish military trumpet, therefore obviously the "draw trumpet," a designation by which the sackbut was, in fact, popularly known at first in the Netherlands, in Italy, in England and in Scotland. The sackbut sprang into being, therefore, when the earliest application of the slide was made to the trumpet. There is reason to think that the slide was used first with the long, straight or partly bent trumpet or *busine*, as it was called during the Middle-Ages, and as a device for reducing the unwieldy length of the instrument. The slide was, therefore, at first pushed in to extend the compass by filling in the gaps of the scale, and in the normal position the slide was drawn out to the full extent of the tube. Pushing in the slide had the effect of *raising* the pitch proportionately by shifts of a tone each; three shifts (four positions) sufficing to fill in the diatonic scale between the second and eighth harmonics‡ when the full possibilities of the slide were realised. After the trumpet had assumed its present form in the fifteenth century the inverse principle was applied to it; the slide was then made double, thus reducing the length of the shift by half, and it was drawn out to lower the pitch. This change was probably deliberately made in order to obtain new tenor and bass instruments. The sackbut was well known in England; in Henry VIII's time we hear that there were ten sackbuts in the royal band.

* *Excerpta Historica* contributed by W. H. Black, Sir T. D. Hardy, Sir N. H. Nicholas and Sir E. Young. London, 1831.

† See Musical Treatise (XIV. cent.), by Mahamud Ibrain Axalihi (Escorial MS. 69), where *Al-buque* figures among the musical instruments in use in his day; see also Arabic-Latin dictionaries.

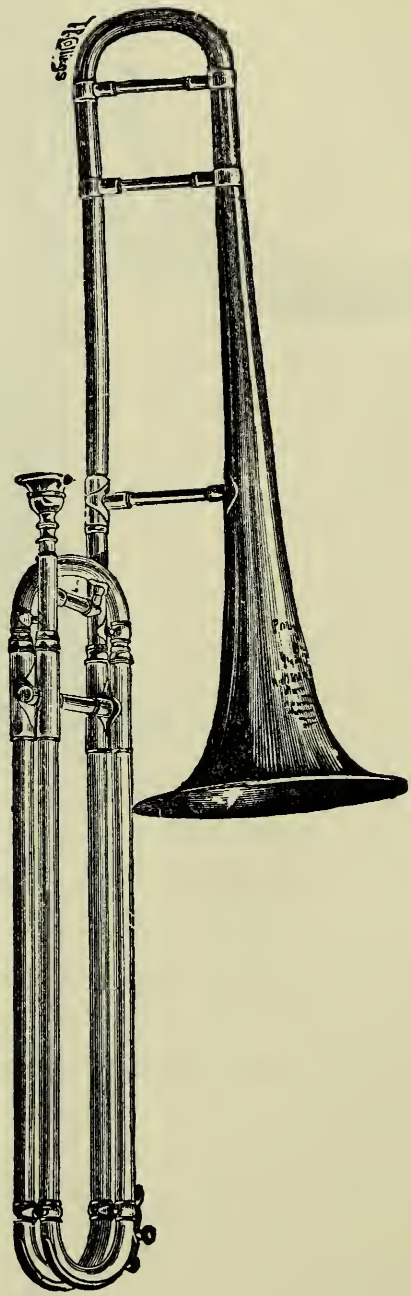
‡ For further particulars on this subject see articles "Sackbut," "Trombone," "Buccina" in the Encyclopædia Britannica, XIth. Edition now in the press.



Contrabass Trombone.

O

Trombones were justly recognised by Bach as adding great splendour to the orchestra, but they fell into disuse



Double Slide Trombone.

after his time, till Mozart restored them to an honourable place in the orchestra. Beethoven and Wagner used them to perfection.

CHAPTER XVIII.

The Trumpet.

French, Trompette. *German*, Trompete.
Italian, Tromba.

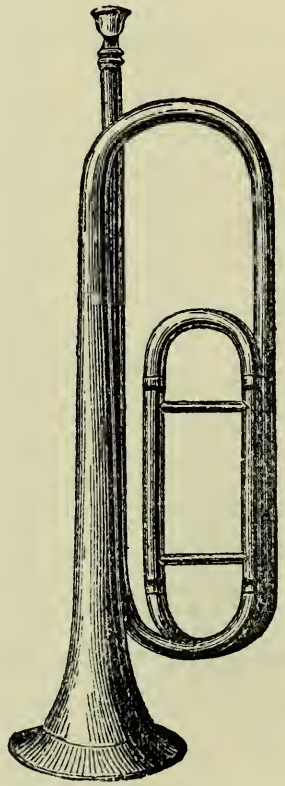
The trumpet belongs to the class of brass instruments with cup-shaped mouthpieces.

Construction. The trumpet consists of a long, narrow tube of brass or silver, doubled round twice upon itself and ending in a bell. The bore, of very small calibre, is cylindrical from mouthpiece to bell-joint including all valve tubes and the tuning slide. The bell joint is conical and is of paramount importance in determining the timbre and harmonic scale of the trumpet. The mouthpiece is a hemispherical convex cup with a rim rounded on the surface; the shape is of importance, and the diameter of the mouthpiece varies according to the pitch and to the lip-power of the player, who must choose one to suit him. The lips are stretched across the cup, and act as vibrating membranes like the vocal cords. There are three chief kinds of trumpets (1). The *natural trumpet* in which the length and pitch are varied by means of crooks. (2). In the *valve trumpet* by means of pistons. (3). In the *slide* and *double-slide trumpets*, as in the trombone, by double sliding tubes. The first and third of these are now practically obsolete, the valve trumpet being universally used.

Production of Sound. In the trumpet, as in the horn, the harmonic scale (from the third to the tenth upper partials) is produced by varying the tension of the lips and pressure of breath; the pitch of this scale may be altered in the natural trumpet by changing the crook, and therefore the key of the instrument which then gives out the same harmonics, but in the new key. Crooks are interchangeable coils of cylindrical tubing, adding length to

the original column of air, and therefore deepening the pitch; they are called by the name of their fundamental tone, which cannot, however, be obtained on the trumpet. The crooks in use now are the F, E, E flat, D, C (higher), B flat and A (lower).

The Natural Trumpet.



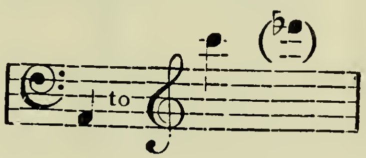
In the valve or piston trumpet, a complete chromatic scale can be obtained as on the cornet, the first valve lowering the pitch one tone; the second a half tone; the third, one and a half tones. It is on the slide trumpet, as on the trombone, that the player can obtain his notes most accurately in tune, as the ear assists in the adjustment of the slide, which has four positions similar to those of the trombone, the closed slide producing the first, and each of the others reproducing the harmonic series a semitone lower.

Trumpets are always scored for, like the French horn, in C, and are therefore transposing instruments.

Compass. The harmonic series is as follows for all trumpets.

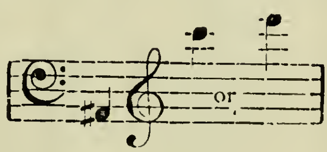
The notes bracketed are difficult to obtain. The B flat always being a little flat requires increased tension, and can never be played in tune *piano;* the F is always sharp, which is remedied by a looser embouchure. The compass of the three kinds of trumpets is as follows: (the real sounds are given).

For the natural trumpet with crooks.



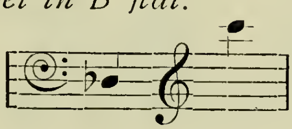
The bracketed note when the high A flat crook is in use.

For the slide and double slide trumpets with chromatic semitones.



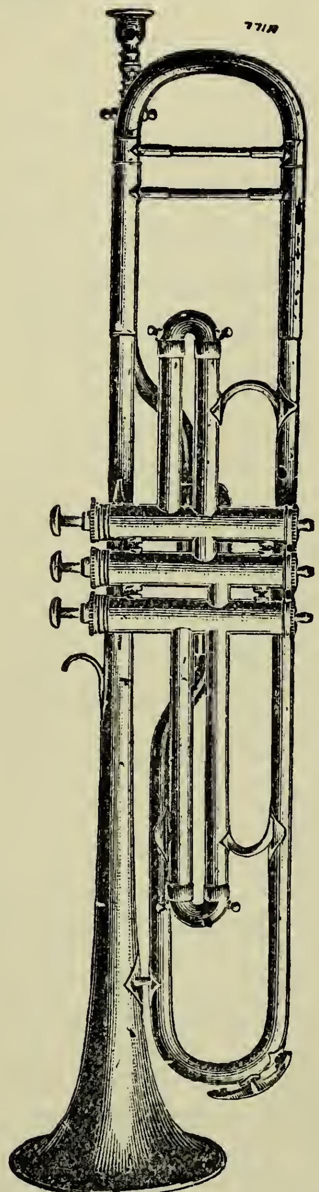
This instrument is a non-transposing one, the music being written as sounded.

For the valve trumpet in B flat.



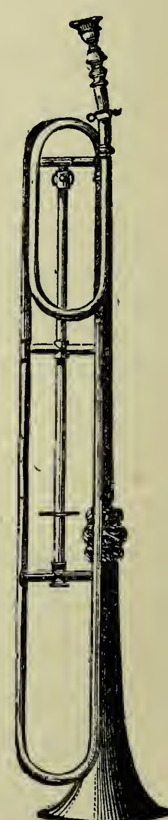
The Quality of Tone of the natural and slide trumpets is penetrating, noble, brilliant, majestic and suitable for triumphant and tragic strains; the lowest notes on trumpets of low register are bad, and the highest are comparatively easy to produce; notes played *piano* have a charming effect.

The slight difference in the quality of tone between trumpet and trombone is accounted for by the wider bore in the latter. The tone of the valve trumpet is very similar to that of the cornet.



The Valve Trumpet.

The Bach Trumpet.

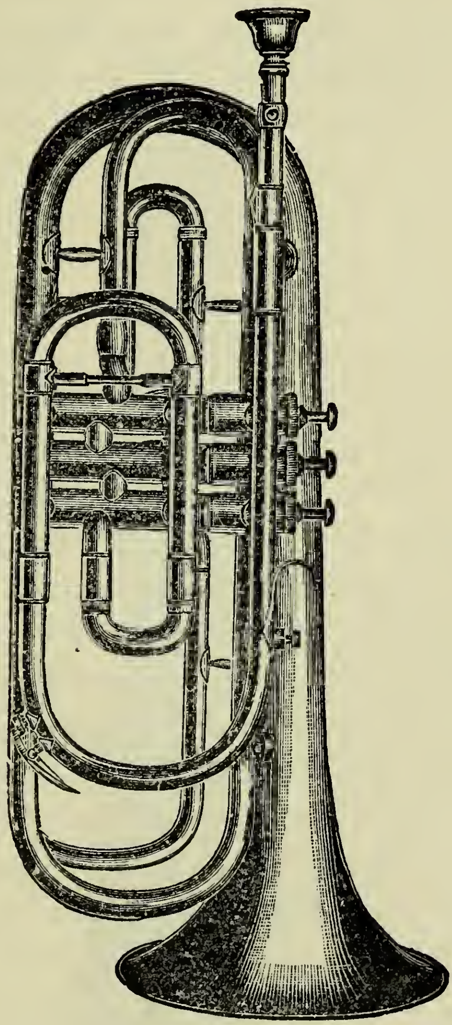


The Slide Trumpet.

Possibilities. All natural open notes except perhaps the lowest and highest can be sustained diminuendo and crescendo; rhythmical figures, scales and arpeggio passages can be played

in slow or quick time. Tonguing, double and triple can be used with great effect to produce in quick time a sort of tremolo or shake; tonguing is the articulation with the tongue of the syllables "te-ke," or "ti-ke," quickly repeated for groups of two or four notes, and of "te-ke-ti" for triplets. On the valve-trumpet, chromatic, as well as diatonic scales can be played.

The Bass Trumpet.



Origin. The trumpet is of ancient origin; having been in use among the ancient Egyptians and the Semitic races. The Greek βῦκάνη, the Roman *buccina* and *lituus*, and the mediæval *busine* were predecessors of the trumpet. The bore was partly or entirely cylindrical in all these, and the whole length

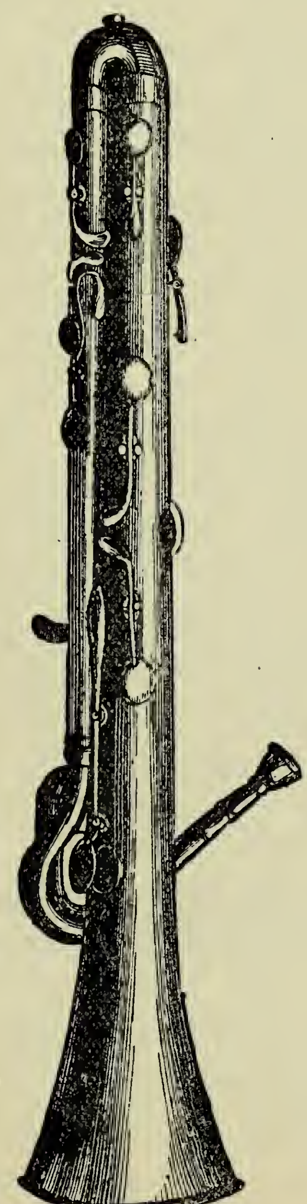
of tube was almost or quite straight except in the buccina, which was curled round the performer's body, as is the case with the helicon variety of the modern tuba. Performers on the buccina are represented in the bas-relief of Trajan's Pillar, at Rome (of which there is a cast in the Victoria and Albert Museum). The trumpet was known during the Middle Ages as the busine, tromba, trompe or trump; in its earliest form it consisted of a long, slender and almost cylindrical tube with a wide bell. The tuba may be distinguished from the busine by its frankly conical bore of much greater calibre. The busine has been pictured by nearly all the great masters. Fra Angelica has painted angels with trumpets, both straight and bent. The idea of bending the tube in three parallel branches is sometimes ascribed to Maurin, 1498-1515, but it must have been practised in Italy before that time, as Luca della Robbia has represented one on a bas-relief of the middle of the fifteenth century. It appears besides in many illuminated MSS. of the fifteenth century as, for instance, in Harleian MS., 2278, fol. 30 (Brit. Mus.). This form of trumpet, known as the natural, subsisted for three hundred years, and performers on it had acquired great dexterity and a large compass to the twentieth harmonic, as is proved by studying the scores of Handel and Bach. There is a modern straight *Soprano Octave Trumpet* with three pistons, called the Bach Trumpet which is peculiarly adapted for the scoring of those great masters. The slide, keyed and valve trumpets, are the later developments of the instrument. Two or three trumpets are used in the orchestra as a rule; some of Wagner's scores, such as "Tannhäuser" and "Lohengrin" require many more. There is a growing tendency, much to be regretted, to replace this instrument by the more commonplace cornet, which has a less noble timbre, this is specially the case in France. Wagner has scored for a bass trumpet with pistons in E flat, which is really a modified trombone. The trumpet was not a favourite instrument with Beethoven.

CHAPTER XIX.

The Ophicleide and the Doublophone.

French, Basse d'Harmonie or Ophicleide.
German, Ophikleid.

Although this instrument is no longer in use in English orchestras, its name is so well known and its banishment so recent, that a few remarks about it may be found useful. This instrument belongs to the class of brass wind instruments with



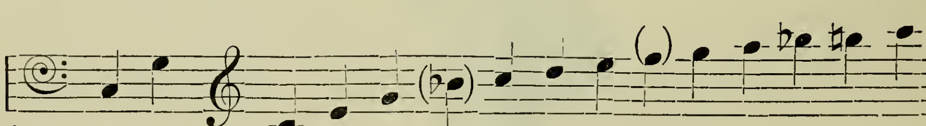
The Ophicleide in C.

cup-shaped mouthpieces, and it is one in which the length of tube is varied by means of lateral holes and keys.

Construction. The ophicleide consists of a conical wooden or brass tube, widening out gradually to a funnel-shaped bell, which is vertical; the tube is doubled upon itself once, ending at the narrow end in a tight coil, from which protrudes a straight piece bearing the mouthpiece, which is a hemispherical convex cup. The modern ophicleides have eleven keys, which are quite easy to finger.

Production of Sound. The lips stretched across the mouthpiece act as vibrating reeds, or as the vocal cords in the larynx. The bell would give out the fundamental C, but that, as on the horn, it is practically impossible to produce it. The following series of harmonics is obtained by overblowing, that is by increased tension of the lips and pressure of the breath, which proportionately increase the acuteness of the pitch. Most ophicleides are in C; the first hole being left open *lowers* the pitch of the instrument a semitone to the key of B major, the second hole being kept closed *raises* the pitch a semitone from C to D flat; the third hole when closed raises the pitch to D and so on, with all the other holes, giving thirty-eight semitones. The method is similar to the positions on the violin and on the slide trombone. This instrument is capable of the most accurate intonation.

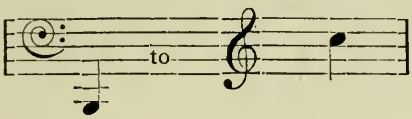
Harmonic Series (the same for every key to which the instrument is tuned).



The B flat, which is always a little too flat, and the F, which is always a little too sharp, can be obtained strictly in tune by closing the F key for the F, and the E flat key for the

B flat; in the harmonic series for those keys the F would be the octave, and the B flat the fifth or twelfth respectively.

Compass. The compass of the ophicleide in C (the most used) is from:



with all chromatic semitones; that is just over three octaves. Both bass and treble clefs are used in notation. It is a non-transposing instrument.

Quality of Tone. The tone of the lower registers is rough and bold, but capable of sustaining above it masses of brass harmonies; that of the medium is coarse, and that of the upper weak and unsteady. It seems a pity that an instrument so powerful, so easy to understand and learn, capable of absolutely accurate intonation and possessing such a full compass should have to be discarded on account of its timbre.

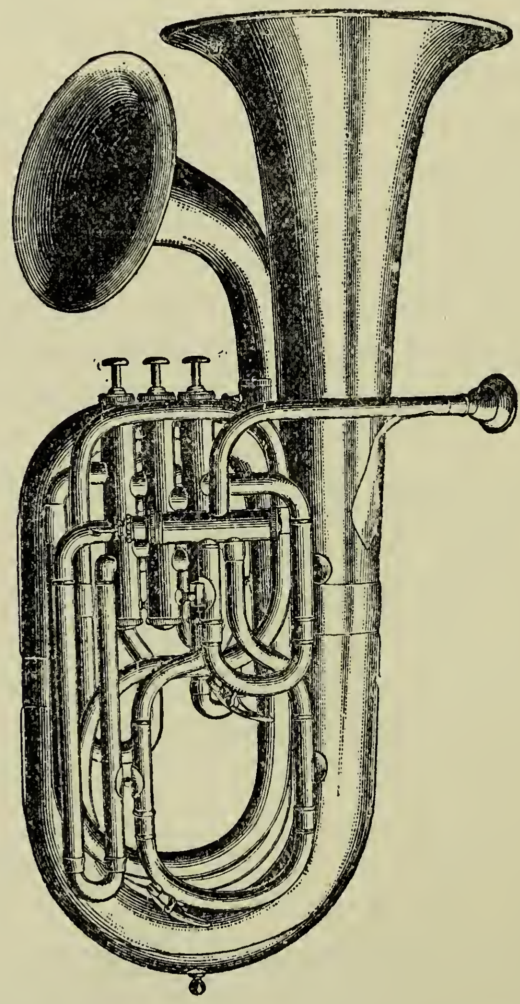
Origin. The name of ophicleide means a snake and door-key in Greek; it is a development of the old serpent bass and of the Russian bassoon. The ophicleide was said to have been invented by Frichot, a French musician living in London, in 1790; the honour is also claimed for Regibo, of Lille, who made improvements in the bore of the old serpent in 1780; and by Halary, of Paris, who claims the discovery of it in 1815, as derived from Haliday's keyed-bugle, invented in 1810. Halary patented the ophicleide in 1821. It is recorded that two ophicleides were used at a musical festival in Westminster Abbey in 1834. There is very little concerted music written for this instrument. Mendelssohn seems the only classical writer who employs it freely. The parts written for the serpent in old music were given to it, but now they are played by the double bassoon.

The Doublophone.

This is a new instrument of a compound nature, patented by M. F. Besson a few years ago; it belongs to the class of brass instruments with cup-shaped mouthpieces.

Construction. It consists of (1). A three-valved euphonium (2). Of a perfect valve-trombone. In form, it resembles the euphonium with a second bell at an angle of about forty-five

The Doublophone



degrees to the original one. The doublophone possesses two complete sets of tubing. (1). The brass tube with wide conical bore of the euphonium. (2). The narrow tube with mixed cylindrical and conical bore of the trombone; both these tubes are in length and diameter of the usual proportions. The three pistons

are common to both instruments, having a double set of bores, one for the euphonium and one for the trombone; a fourth auxiliary piston has a hook which enables the player to pull it out with the left thumb, and it returns automatically by means of a spring, when released, to its normal position. This fourth piston effects the instantaneous change from one instrument to the other; when it is closed, the column of air travels through the wide tubing of the euphonium; on opening the piston, the exit of the air is through the smaller-bored tubing and bell of the trombone; this latter unscrews and can be taken off when only the euphonium is needed.

Compass. Production of Sound. These are the same as for the tenor-valve trombone, and the baritone euphonium. It is a non-transposing instrument, the music for it sounds as it is written.

Quality of Tone. The tone is pure, rich and full for the euphonium and clear and ringing for the trombone.

CHAPTER XX.

The Cornet.

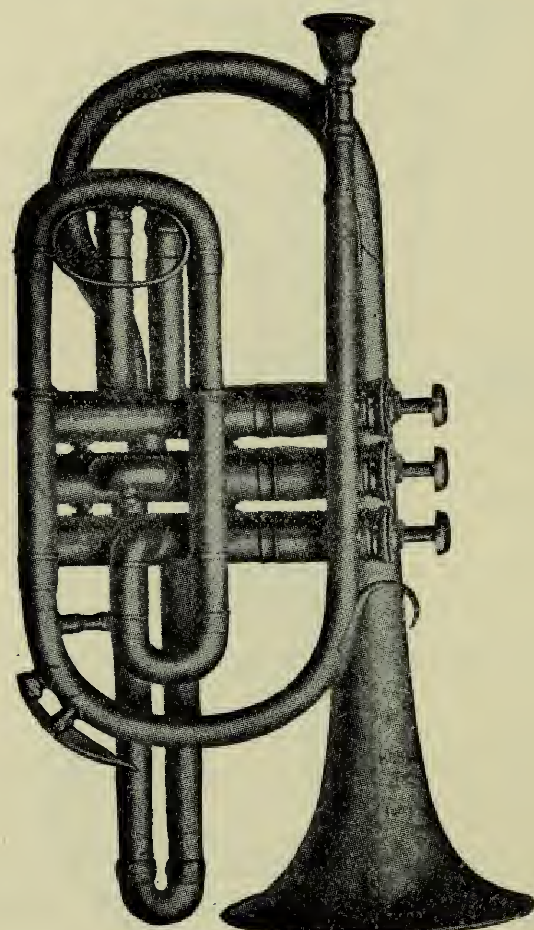
French, Cornet à Piston. *German,* Cornett.
Italian, Cornetto.

The cornet belongs to the class of brass instruments with cup-shaped mouthpieces.

Construction. It is composed of a cylindrical tube of brass or electro-silver of a larger bore than that of the trumpet, but becoming conical just near the bell; this tube is doubled round upon itself. The bore of the cornet is mainly conical (but of a less pronounced taper than that of the Flügel horn) and also partly cylindrical, owing to the necessity of making all the valve tubes and tuning slides cylindrical. The mouthpiece, as before mentioned, is cupped like that of the trumpet, but

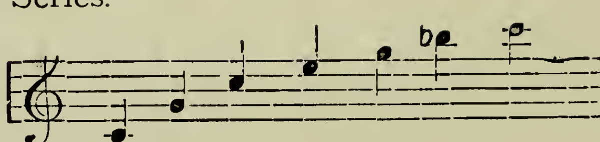
larger, and as for that instrument the choice of the diameter depends greatly on the lip of the player.

Production of Sound. The sound is produced by stretching the lips across the mouthpiece, making them act like the vocal cords, and setting them in vibration by means of the breath. The harmonic series from the second to the eighth partials is obtained by the varied tension of the lips and pressure of breath called overblowing.



The "Proteano" or Quick Change Cornet.

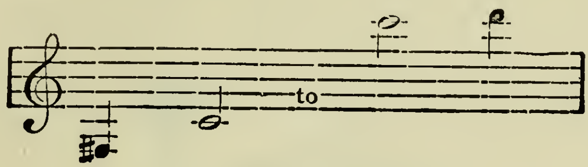
Harmonic Series.



The intermediate notes are obtained by means of three

valves which lower the pitch, respectively, one tone; a half tone; one-and-a-half tones, by which means a chromatic scale throughout the compass can be obtained.

Compass. The compass of the cornet is:



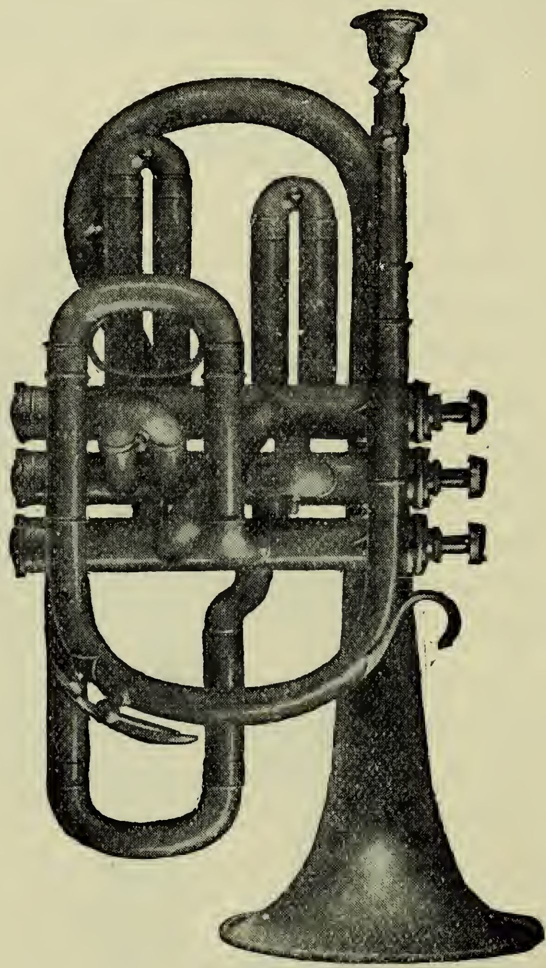
Quality of Tone. The tone is somewhat between that of the horn and the trumpet with all the blaring, penetrating quality of the latter, without its heroic, majestic tone. There is a growing tendency in some orchestras, notably in France, to allow the cornet to supersede the trumpet, which is to be greatly regretted; for although the cornet is bright in tone and an agile instrument with great technical capabilities, its sound is hard and commonplace and more suitable for solo playing or military music, than for rendering serious concerted works. In Germany it is little used except in military bands.

Possibilities. Notes sustained, crescendo or diminuendo; diatonic or chromatic scale and arpeggio passages; leaps; shakes; and, in fact, all kinds of musical figures in any key, can be easily played on the three-valved cornet. Double-tonguing is also practicable, as in the case of the flute; that is to say the articulation with the tongue of the syllables "ti-ke" for double and "ti-ke-ti" for triple, produces a staccato effect. Cornets can be transposed by means of crooks, into various keys; those of B flat and A being the most used. Crooks are interchangeable spiral tubes which add to the length of a column of air, and therefore to the depth of the pitch.

Origin. The prototype of this instrument is thought to be

the old posthorn, but the cornet seems to have been gradually evolved from the keyed bugle and the trumpet, rather than invented, and has been called by Mr. Hipkins (Cantor lectures), a hybrid between the bugle and the high trumpet; it gives the same harmonics as the former, though the bore of the bugle is conical throughout. The modern cornet first

Cornet with Enharmonic Valves.



made its appearance at the beginning of last century, though the name was formerly used to designate an ancient instrument of wood having a conical bore terminating without bell and blown through a cup or a funnel-shaped mouthpiece according to the type of cornet. The new

"Victory" cornet has extra compensating piston tubes which enable the player to play every note in tune in any key and with any fingering, without having, as on the ordinary instrument, to humour certain notes with the lips in order to obtain them strictly in tune.

Much helpful information for teaching Geog-
raphy

SECTION II.

STRINGED INSTRUMENTS.

CHAPTER XXI.

(*a*) *Played with a bow*:—The Violin, Viola, Violoncello, Double-Bass.

(*b*) *Twanged by the fingers*:—The Harp.

(*c*) *Stringed instruments with keys*: The Pianoforte.

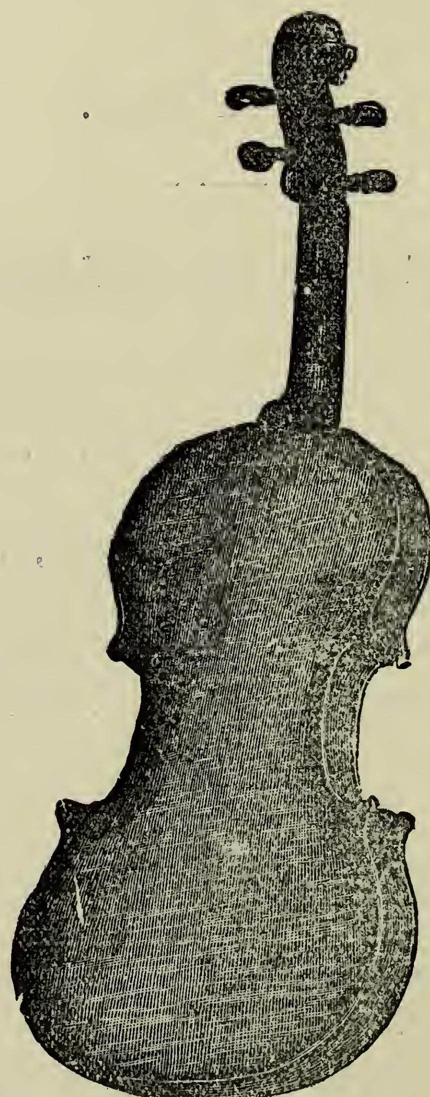
The Violin or Fiddle.

French, Violon. *German*, Violin or Geige.
Italian, Violino.

The violin belongs to the class of stringed instruments played with a bow.

Construction. It is made entirely of wood (except the strings), and consists of two parts (1) the body; (2) the neck. (1.) The body comprises (a) the *belly* or *soundboard* forming the uppermost part of the body, and slightly and delicately arched. (b) The *back*, arched in the violin family and flat in that of the viols. (c) The *purfling*, a delicate

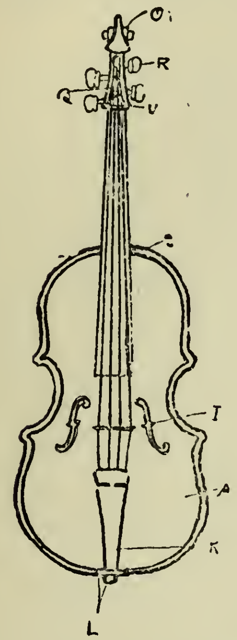
little moulding forming a border round the belly and back. (d) The *edges* which project over the sides or ribs and are called *upper bouts* (e) round the shoulders, *centre bouts* (f) at the incurvations; and *lower bouts* (g) from the latter to the tail pin. (h) *The corners*, which are strengthened



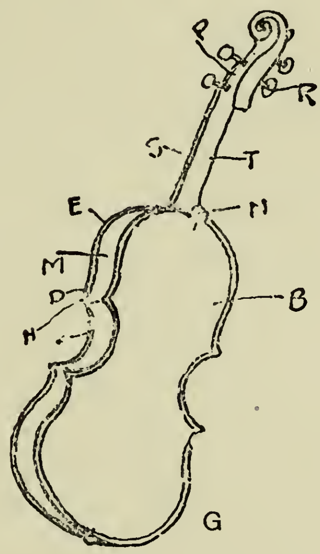
"The Emperor" Strad.

from within by means of the four corner blocks, $1\frac{1}{2}$ inch in thickness, which fill in the corners and lie closely upon the inside between the soundboard and back. (i) The *f holes* (as the soundholes are called from their shape), which form a distinctive feature of the violin tribe. (j) *The bridge*

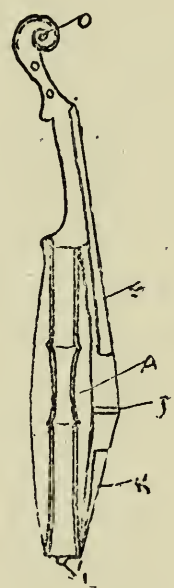
which assumed its present delicate proportions under Stradivarius. (k) *The tail-piece*, which is pierced with sufficient holes to receive the strings. (l) *The tail-pin* with its rest, which is the kind of button to which the tail-



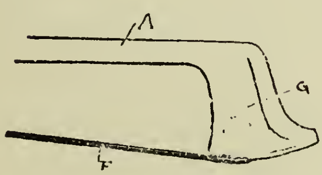
Front View of the Violin.



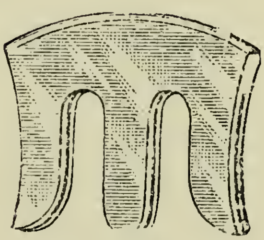
Back View of the Violin.



Profile of the Violin.

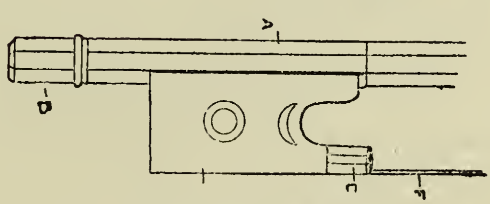


Head of the Bow.



Violin Mute.

The Bridge.



The Nut of the Bow.

piece is attached by means of a loop made from a gut string, (generally a D string), and which the ebony rest supports at the edges of the violin, thus protecting them,

and preventing the rubbing or chafing that would otherwise result from the tension of the loop. (m) *The shoulder*, which is at the base of the neck, where it fits on to the body of the violin round the button (n) which is cut in one piece with the back—not added.

(2) The neck comprises (o) the volute called the *scroll*, with (p) the *cheeks* of the scroll forming the walls of the *peg-box*, (q); o, p and q constituting the head. (r) *The pegs* which are four in number in the violin, viola and violoncello, and three, four or five in the double bass, are screws serving to tighten or slacken the strings which are wound round them. (s) *The fingerboard*, which lies flat on the neck, but stands away from the soundboard; it enables the strings which would otherwise be open, to be stopped by the fingers at any of the intervals of the diatonic and chromatic scale. (t) the *neck* proper, which is adjusted to the body at the shoulders round the button (n). (u) *The nut* which is a small strip of ebony forming a little bridge between the peg-box and the finger-board, is provided with small grooves to receive the strings and raise them clear of the fingerboard.

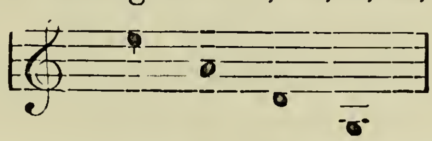
In the interior of the violin for the support of the bridge and placed under its right foot is a small cylinder of wood called the *soundpost*; under the left foot is a beam called *the bar*, which is a piece of wood glued on lengthways to the arched soundboard.

The back, ribs and bridge, are of maple wood; the soundboard, bar and soundpost, of fir; the fingerboard, nut, tail-piece and pegs, usually of ebony; the exterior is varnished.

The most perfect bow, which serves as a model for others, is the one we owe to François Tourte, born in Paris, in 1747. It consists of:

(a) *The stick*, made of Pernambuco wood, which alone combines the requisite lightness and power of resistance; it is bent by heat till it is slightly convex to the hair. (b) *The screw* or ferrule at the extremity of the stick held by the hand, which is the means of tightening or loosening the hair of the bow. This screw, about 3½ inches long, hidden within the stick, runs through the eye of another little screw at right angles to it, which is firmly imbedded in the *nut*. (c) The *nut* slides up and down in answer to the screw along the stick, and contains a little cavity or chamber into which the knotted end of the hair is firmly fixed by means of a little wedge, and then flattened into a ribbon by means of a ferrule. (d) The hair outside the nut is still further protected by a little mother-of-pearl *slide*. The *hair* is carefully chosen from the best white horsehair, and each of the 150 or 200, composing the half-inch wide ribbon of each bow, must be perfectly cylindrical and smooth. The head of the bow (g) is cut in one piece with the stick, and is fitted with a chamber and wedge contrivance similar to that of the nut, and in it the other end of the hair is immovably fixed.

Production of Sound. Notes are produced in various ways on the violin. 1. The *open* notes by drawing the bow (the edge of the horsehair held at right angles to the strings), backwards and forwards between the bridge and the fingerboard, thus setting the strings in vibration; the names of the open strings are 1, E; 2, A; 3, D; 4, G.



2. Every other chromatic and diatonic succession of notes is obtained by using the bow as above, and in addition, pressing one of the strings against the fingerboard, with one of the four fingers of the left hand, according to the

notes desired, thus shortening the strings by what is called *stopping.* The hand slides up the neck of the violin in fourteen different positions, each beginning a grade higher than the last and using each of the four fingers in succession; this will be better understood from the following diagram: 1) The first seven positions are most used.

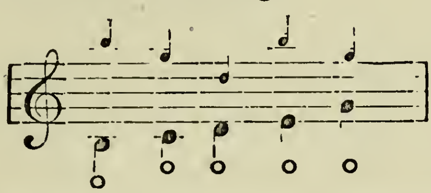
1st position	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	etc.
2nd ,,		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	
3rd ,,			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3
4th ,,				1	2	3	4	1	2	3	4	1	2	3	4	1	
5th ,,					1	2	3	4	1	2	3	4	1	2	3	4	
6th						1	2	3	4	1	2	3	4	1	2	3	4
7th ,,							1	2	3	4	1	2	3	4	1	2	3

The "o" represents the open string. Beginning on the G string, and playing four notes in the first position on each of the strings (the first on each string being an open note) the above passage is obtained.

3. The third method of producing notes on the violin is by *Harmonics*, notes having a different tone-colour, and enabling the performer considerably to extend his compass in the highest register; there are two kinds of harmonics, *natural* and *artificial.* These harmonics are the tones which a string gives, when, instead of vibrating as a whole, it vibrates in parts. The *natural* harmonics are obtained by touching the strings with the fingers of the left hand, so as to divide them in their length without sufficient pressure to bring them into contact with the fingerboard. The natural harmonics are indicated by an "o" under the note to be touched. The *artificial* harmonics make even higher sounds possible, and are produced by stopping an open string firmly with the first finger, and touching the string lightly with one of the other fingers at the intervals

of a fourth (most generally used and easiest), of a fifth, or of a third major and minor; a few examples are subjoined; the complete list would be beyond the scope of this work.

Natural Harmonics on the G string.



The little notes above show the harmonics, the crotchets below, the note touched to produce it.

Artificial Harmonics

The crotchets played with the first finger are pressed firmly, and the minims are touched lightly with the 4th or 3rd finger, thus producing various harmonics.

Compass. The compass of the violin varies from three to four octaves generally in the orchestra, but in the high register no true limits can be assigned, for the virtuosi are continually extending it according to their skill.

The treble or G clef is used in notation.

The violin is a non-transposing instrument, which can play in all keys (the music for it sounds as written), but

those which contain most open notes, *i.e.*, those of C, G, D, A, E, F, and their relatives minor are the best, for the open notes are more sonorous than the stopped ones.

Quality of Tone. An enormous variety of quality can be obtained from this instrument. Of the four strings, the notes of the *E string* are clear and sharp, of the *A string* soft and round, of the *D string* very mellow, deep and full like the chest notes of the human voice; of the *G string* perhaps because covered with silver wire, hard, but not powerful, owing to the great contrast between the smallness of the instrument and the depth of its tones. The harmonics have a quality resembling that of the flute (hence their name in French and German, *Flageolet*), of mysterious ethereal clearness and softness.

If the strings of the violin are set in vibration by the bow near the bridge (*sul ponticello, sur le chevalet*), the tone becomes louder, harder, and more energetic, as also when the bow is used near the nut; (*au talon*) when the bow touches the strings over the fingerboard (*sul tasto, sur la touche*) the tone becomes soft and flute-like. When the *point* of the bow is used, lightness is obtained—from the *heel* energy and from the *whole length* amplitude.

In addition to these, innumerable shades of tone can be produced on the violin by an imperceptible movement of the arm, a pressure with the bow, an unconscious sentiment of the performer, for there is no instrument, except the voice, that responds more readily to the soul of the musician, or is capable of greater expression; from it proceed at will sighs, aments, weeping, musing, joy, mirth, triumph, passion, etc.

Possibilities. The technical possibilities of this instrument are almost infinite: chromatic and diatonic scale and arpeggio passages, both legato and staccato: chords

(with reservations) shakes, grace notes, sustained notes diminuendo and crescendo, leaps, etc. Varied effects are produced by (1) the *Tremolo*, a rapid vibrating repetition of the same note by a rapid movement of the bow; (2) the *Pizzicato* when the strings, instead of being vibrated by the bow, are plucked by the fingers, as in playing the guitar, which produces dry, short notes without resonance. Both these devices, the tremolo and the pizzicato, were invented by Monteverde at the beginning of the 17th century for dramatic effect in his opera *Tancredi e Clorinda* (3) The *Mute* or *Sordino* (indicated by "con" with or "senza" without "sordino") a little wooden or brass implement like a tiny comb placed on the bridge, acts as a damper and produces a muffled, veiled softness peculiarly penetrating.

Origin of the Violin Family. Two principal and diametrically opposed opinions prevail as to the ancestry of the violin; *the first* derives it from the Greek lyre through the intermediary of the monochord and its successors, the tromba-marina, the crwth, crowd, rebec, gigue, and viol, leaving the Moorish rebab out of the question altogether.

The second derives the violin from the East through the rebab, introduced into Spain by the Arabs in the 8th century, and gives it the Ravanastron of the Hindoos for a progenitor.

It is with diffidence that I venture to set forth the conclusions at which I have arrived, after careful investigation of the point.

In determining the ancestry of the violin, I leave the bow out of the question; firstly, because even less is known of its history than of that of the violin; secondly, because it was applied equally to most stringed instruments, with a resonating body and bridge, which before had been twanged by the fingers or plectrum.

The chief feature of the violin is, according to my opinion, the sound-chest, which, roughly speaking, is composed *of two parallel boards connected by ribs or sides* in contradistinction to the vaulted backs and flat soundboards *without ribs* of the rebecs, gigues, crwths, lyres, lutes, mandolines, like a vertical section of a pear.

There was an ancient stringed instrument with a shallow sound-chest, of which the flat parallel boards were joined by ribs; in addition, its various types possessed bridge, pegs, tail-piece, sound-holes, purflings, and perhaps finger-board; this prototype of the violin, which differs chiefly in its earliest form by having no neck, is, moreover, identical with the fiddle and violin in name; this instrument is the *cithara* of the Greeks, the chetarah, or ketharah of the Chaldees, the kissar of the Nubians, the kithara of the Arabs (pronounced by the Arabs of Northern Africa "*githara*," by the Moors of Spain, cuitra or guitra, and finally called guitarra before the 14th century, and in England, guitar.

This instrument, differing in construction from the lyre, but of the same family, and introduced to the Greeks from Asia, did not come to us solely through the Arabs; before their invasion of Spain, the instrument was already in use there, introduced by the Romans under the name of Fidicula (later corrupted and softened to Vihuela, vielle, viol). San Isidore, a bishop of Seville, of the 7th century, tells us that the ancients called the kithara *fidicula* (see "Etymologiarum," Book III, cap. 21, by San Isidore.) Now the guitar-fiddle of the troubadours has the characteristic sound-chest of the violin, incurvations, bridge, soundholes, tail-piece, fingerboard and bow, all differing in detail from those of the modern violin, of course, but similar in principle. The ancestor of the modern guitar

was identical with the guitar-fiddle until the moment when the bow was applied to the latter, then it rapidly developed into vielle, viol, violin; while the guitar remained practically stationary. The steps in the evolution of the guitar-fiddle from the cithara may be seen in the musical instruments found among the drawings illustrating the Utrecht Psalter, 6th to 8th cent. (See Part II. "The Precursors of the Violin Family.")

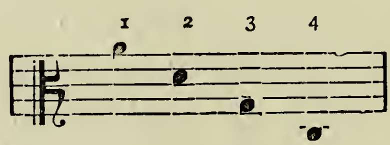
The instruments with vaulted sound-chests, the rebab, rebec, crwth, crowd, rotta, gigue, need not be taken into consideration; they reached no modern development and are now extinct (the lute and mandoline are directly derived from Arab instruments of the same date as the rebab), further, they did not possess a single feature of the violin not already shown in the cithara.

The first steps towards the production of the violin are ascribed by some to Gaspar Duiffoprugcar, or Tieffenbruecker, as he was called in his native country, the Tyrol (1500-1560); he lived successively in Bologna, Paris and Lyons; his violins were much prized for their beautiful tone, and are now very rare. Others name Gasparo da Salo as the inventor of the first modern violin at the end of the 16th century. It is, however, from Cremona that we get the perfect instrument from the hands of the Amati family (1592-1682); the Stradivari (1644-1737), and the Guarneri (1630 to about 1695). The first solos for the violin were written by Biagio Marini in the middle of the 17th century. Monteverde was the first to assign to the violin its proper place as leader and to give to the strings a prominent position in the balance of the orchestra. In modern orchestras of average size, there are from 18 to 38 violins divided into firsts and seconds.

CHAPTER XXII.

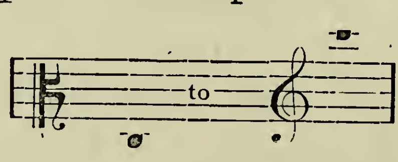
The Viola.

This member of the Violin family is a little larger than the violin, and the remarks as to construction, possibilities and origin, apply equally to the viola—its compass lies a fifth below that of the violin, the four strings being (1) A; (2) D; (3) G; (4) C.



The alto clef, the C clef on the third line, is used in notation, except in the high register for which the G clef is used.

Compass. The practical compass of the viola is from



or higher, according to the capabilities of the performer.

Quality of Tone. The sound of the strings of the viola is a peculiarly telling and melancholy in accent, the tone of the upper register, forming the link between the 'cello and violin, is most used in the orchestra.

The viola has been much neglected and long unappreciated by musicians, who were content to use it to double, an

octave higher, the upper part of the bass. The Great Masters since Mozart, however, have recognised its merits and written melodies and separate harmonies for it. The tone of the viola is so penetrating and so captivating to the ear that it is not necessary to have as many violas as second violins in the orchestra.

The Viola.

CHAPTER XXIII.

The Violoncello.

French, Violoncelle. *German*, Violoncell.
Italian, Violoncello.

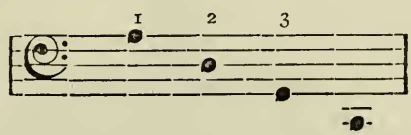
This instrument belongs to the violin family, and is constructed on the same principles, but much larger. account of its size, it is either held between the performer's knees, or it is made to rest on the floor by means of a foot or spike, the fingerboard pointing towards the left shoulder.

Production of Sound. The sounds are produced in the same manner as on the violin, but the fingering is much more difficult; for the high register, shortening the strings by means of the thumb is resorted to. The thumb of the left hand is firmly placed horizontally across the string at the note over which the sign $\underline{\overset{\wedge}{\vee}}$ or $\tilde{\text{O}}$ is placed, and the four fingers then stop the notes in the usual manner. The thumb notes are of a thinner and less agreeable quality than the others, and except with first-rate performers very difficult to obtain absolutely true and even in tone.

Harmonics, natural and artificial, are produced as on the violin, excepting that in the latter kind, instead of the first finger, the thumb is used to stop the string, the other fingers touching the nodal points.

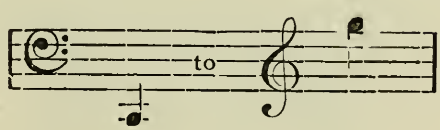
The harmonics are more beautiful on the 'cello than on the violins, sounding like the mellow, round notes of the flute, and they are accordingly used in preference to the ordinary notes of the upper register, as these have no beauty and are not much called into use, especially in the orchestra where they would encroach on those of the viola.

The four strings of the 'cello bear the same names as those of the viola, but are pitched an octave lower, *i.e.*, (1) A; (2) D; (3) G; (4) C.



The bass F clef, the tenor C clef on the fourth line, and treble or C clef are used in notation.

Compass. The compass is 3½ octaves with all chromatic intervals, and higher notes are obtained by virtuosi in solo playing.



The Quality of Tone. The tone is of extreme sonority, mellownesss and richness, the notes of the A string having a voice of penetrating vigour and passionate brilliancy, most suitable for rendering melodies. Nothing, in fact, can excell a mass of 'cellos, on the A string in expression, in voluptuousness of sound and tender passion. The 'cello is the instrument most suited to express the deepest feelings of composer and performer.

Possibilities. These are the same as for the violin, except that, on account of its greater length of string, passages requiring a great stretch of hand are less practicable, and owing to the great depth of quality and thickness of string

The Violoncello.

the same *extreme* agility as on the violin is not possible; chords (with reservations), the *pizzicato*, *tremolo*, *staccato*, *legato* styles, shakes, and the use of the mute are all practicable (see "Violin *Possibilities*.") In the orchestra the 'cellos often double the double bass an octave higher, and the music for both is written on one stave, and in that case with the word "bassi." However, since the days of Beethoven, melodies are frequently given to the 'cello. Wagner in his operas has scored solo melodies of wonderful beauty for this instrument.

Origin. The name violoncello is a diminutive meaning "small violone," or double bass, not violin; but it is really a bass violin, formed on a different model to the violone, which has the sloping shoulders and flat back of the viol family, whereas those of the 'cello are rounded. The 'cello is traced to Italy early in the 17th century, when it formed the fundamental bass in church music; its use in secular music and as a solo instrument is of later date, in the 18th century. The first English 'cello was made during the reign of Charles II.

CHAPTER XXIV.

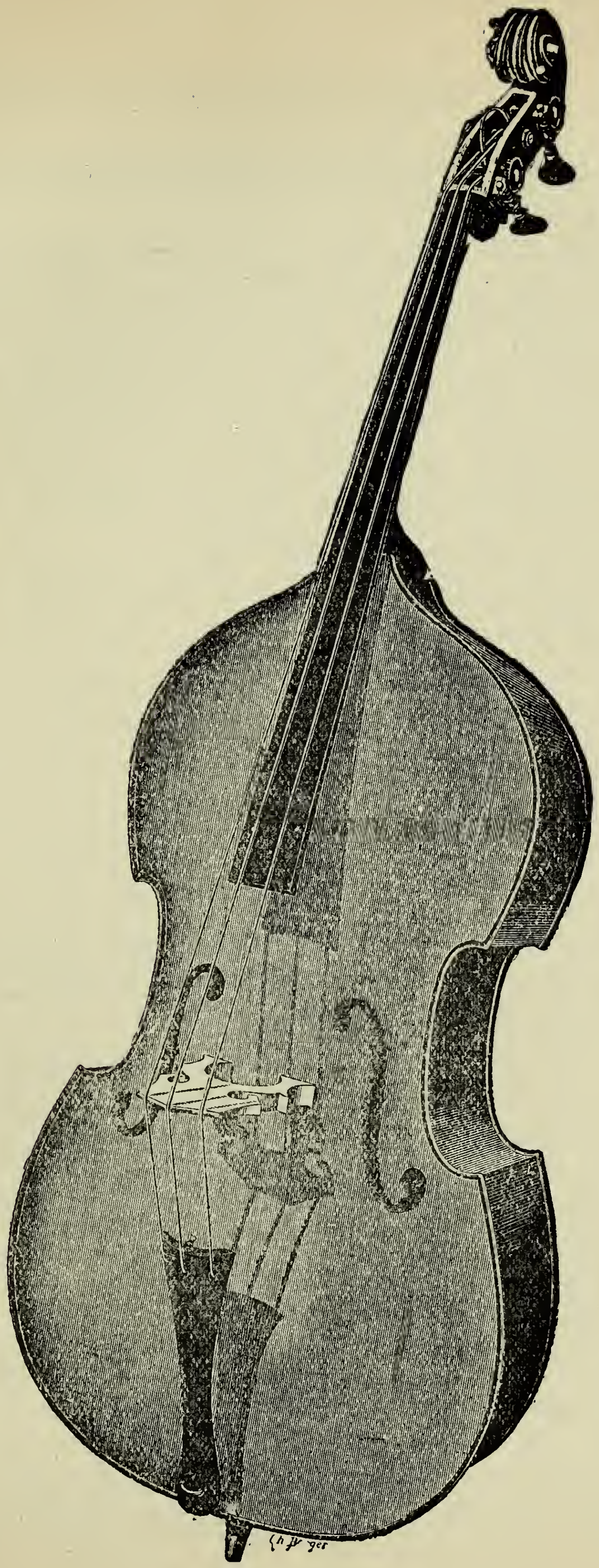
The Double Bass.

French, Contrebasse. *Italian*, Contrabasso or Violone. *German*, Kontrabass.

The double bass is the largest of the stringed instruments played with a bow, and belongs to the violin family, from which it differs a little in construction.

Construction. The double bass has slanting instead of round shoulders (resembling in that particular, the viola da gamba), that is to say that where the belly is joined by the neck and fingerboard, the former has a very decided point, whereas in the violin, viola and 'cello, the fingerboard is at right angles to the horizontal part of a wide curve. It is thought that the shoulders of the double bass are of necessity made drooping for additional strength of construction, on account of the strain occasioned by the tightness of the strings; the double bass was formerly made with a *flat*, instead of an *arched* back; now the instrument is as often made with an arched as with a

The Double Bass Bow.



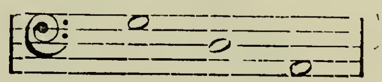
The Double Bass.

flat back. The bow is shorter and stouter in make than the violin bow.

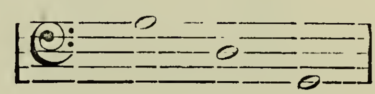
Production of Sound. The chief differences between the 'cello and double bass in producing the sound is that in the latter, owing to the extreme length of the string, the stretches for the fingers are very great and owing to the thickness of the strings great force is required to press them against the fingerboard when they are vibrating.

On account of the great size of the double bass the performer often plays standing.

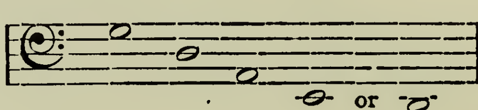
This instrument has sometimes three strings, tuned in England to G, D, A;



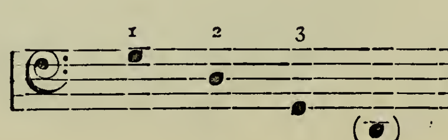
in France and Italy to



However, the four stringed double bass is now almost exclusively in use in orchestras, and these four strings are tuned in fourths thus:

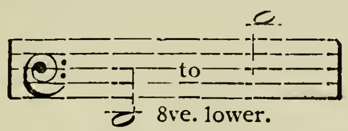


The F or bass clef is always used in notation and to save so many ledger lines, the music is always written an 8ve. higher than played; but the double bass is not a transposing instrument. Mr. A. C. White, however, finding that music demanded lower notes still of the double bass, first tuned his three strings to



eventually adding a fourth string, the lower D, thus gaining additional power and clearness for the third and fourth strings from the fact that the first and second, being their octaves higher, vibrate in sympathy, obviating the necessity of making the 'cellos play in octaves with the double basses to increase the tone when the lowest register is used.

Compass. The compass is three octaves from



Real Sounds.

Quality of Tone. The quality of tone is rather rough, very powerful and varies greatly in its degrees of loud and soft. The deep notes when played *piano* sound weird or grotesque, and are used sometimes instead of the kettle drum; when *forte*, the tone is overwhelming, grand, gigantic. The lowest octave is seldom used, except as a fundamental octave bass to 'cello, bassoon or trombone. The tone in the *pizzicato* is full and rich as the vibrations are slow, and it changes character according to the harmonies which lie above it:—with a chord of the diminished seventh above it, the *pizzicato* sounds wild and threatening, but with the common chord, calm and majestic.

Both natural and artificial harmonics are possible on the double bass, but the natural are the best (see "harmonics" in the Chapter on the Violin. The upper register is not used in orchestral music as that pitch belongs to the 'cello.

Possibilities. Quick passages, though possible, are not advisable; they cannot sound clear, for the strings require time to vibrate; but excellent effect is produced by what is called the "intermittent tremolo"; owing to the elasticity of the bow, it rebounds several times on the strings when a single blow is sharply struck, forming a series of

short tremolos. Long tremolos would be too exhausting to the player to be much used in quick *tempi.*

The double bass is the foundation of the whole orchestra, and therefore of great importance; it plays the lowest part, often as its name indicates, only doubling the 'cello part an octave lower. It is only since the beginning of this century that an independent voice has occasionally been allotted to it—as in the Scherzo of Beethoven's Symphony in C minor:

These opening bars of the movement are played *soli* by 'cellos and double basses, a daring innovation of Beethoven's which at first caused quite a consternation among conductors and in musical circles.

Origin. Whether he violin or the double bass was the first invented is still a matter of dispute. As the double bass has some of the characteristics of the viol family and of the violin too; it may have been posterior to both; but its name which means "large violin," seems to indicate that it is an offshoot of the viol, from which it only differs in the matter of the number of strings and of the soundholes, which instead of being C shaped, back to back, are "f f" holes, as in the violin; the most probable hypothesis is, therefore, that it is the bass viol brought up to date after the violin made its appearance, to complete the quartett.

CHAPTER XXV.

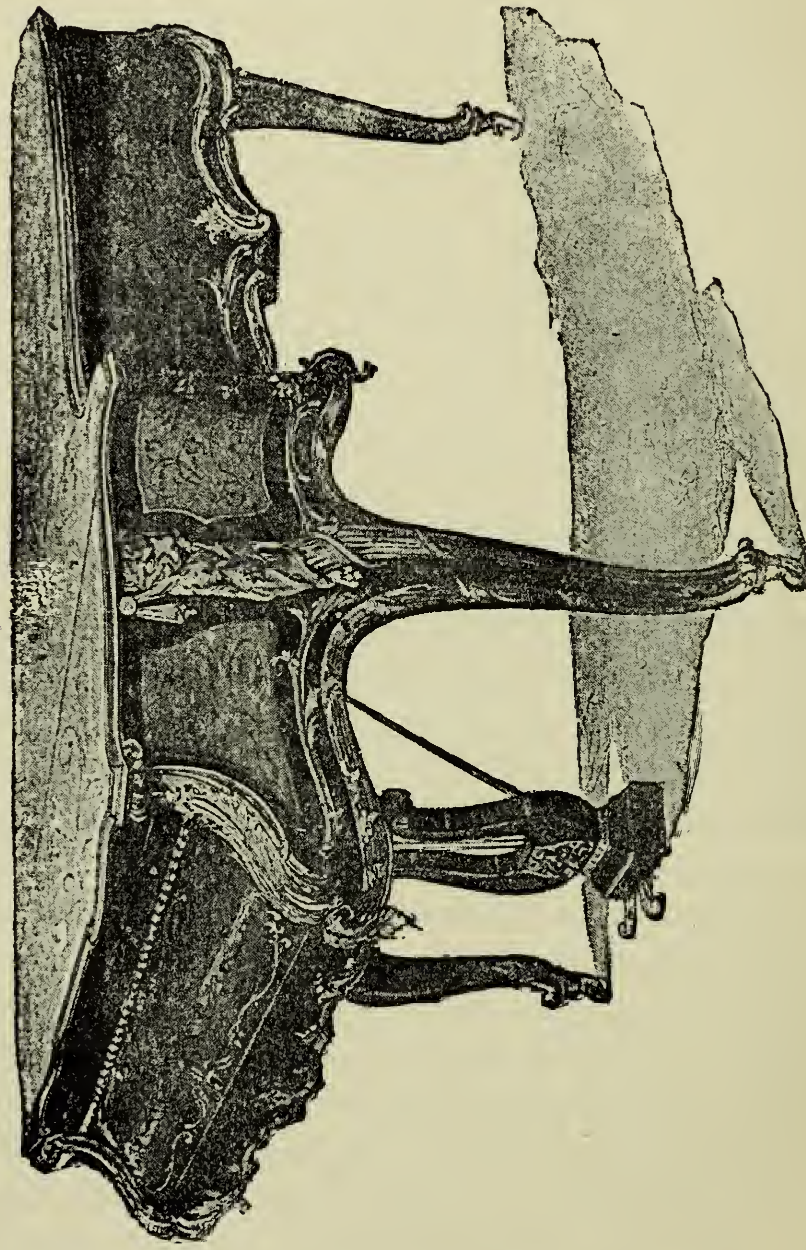
The Grand Pianoforte.

German, Flügel klavier. *French*, Piano à queue.
Italian, Piano a coda.

The piano belongs to the class of stringed instruments with keyboards.

Construction. The outward appearance of the piano in all its varieties of cottage, square, upright-grand, grand, concert grand, etc., is too well-known to need description. This instrument possesses keys sufficient for a chromatic scale throughout its compass; each note is provided with one, two or three strings in unison (according to the pitch, the medium and high register usually having three) a hammer and a damper (except the two highest octaves which have no dampers) besides a complex system of mechanism. The chief parts of a pianoforte, about which it imports us to know something are, (1) the case and framing, (2) the strings, (3) the wrest plank, (4) the soundboard or belly, (5) the bridges, (6) the action and (7) the pedals; the

latter will be treated in *Production of Sound.* (1) The *case,* made of solid wood, mahogany or oak, veneered, must be so strongly constructed as to resist the enormous



Exterior of Erard Grand Pianoforte.

tension of the strings—approaching thirty tons in a modern concert grand. To that end concurs the cast-iron or steel *frame* placed over the soundboard, which, in fig. 3,

may be observed to have strong iron or steel bars (the number of these bars varies with different makers; see Barless Grand) across the strings, but not touching them, from side to side of the frame; the holes of irregular shape are made in the metal frame for the sake of lightness. (See fig. 3).

(2) The *strings* are now made of the strongest, and at the same time, the most elastic of metal, tempered, cast-steel wire, which is able to meet a tension of at least 200 lbs. for each string in recent grands. The pitch of the strings depends on their diameter as well as their length. In order to reduce the latter for the bass strings, the expedient of covering them with copper or white metal wire has been resorted to here, as in the G string on the violin, for example. The earliest stringed instruments with keyboards, of which we have any knowledge, seem to have made their appearance in Europe about the middle of the 14th century, contemporaneously with the first manufacturers of drawn iron wire at Nuremberg (see "History of the Pianoforte," by A. J. Hipkins, F.S.A., Novello, 1896.)

(3) The *wrest plank* (see fig. 3), corresponding to the peg-box of violins, will be found in grand pianos at the keyboard end under the music rest. Into it are inserted the wrest or tuning pins. In order to bear the strain of the enormous tension, the wrest plank is made of layers of the hardest woods—oak, beech, etc., in each of which the grain runs at right angles to that of the others to prevent splitting; the whole is further strengthened with a metal plate, to assist in insuring the rigidity of the tuning pins.

(4) The *soundboard* (see figs. 2 and 3) consists of lengths of spruce fir glued together like that used for the best violin bellies, chosen on account of its elasticity and

resonant power, and to both sides of which several coatings of varnish are applied to prevent cracking or warping. The soundboard, which is slightly convex to the strings, lies under them along the whole length and breadth of the piano nearly as far as the wrest plank; between the sound-

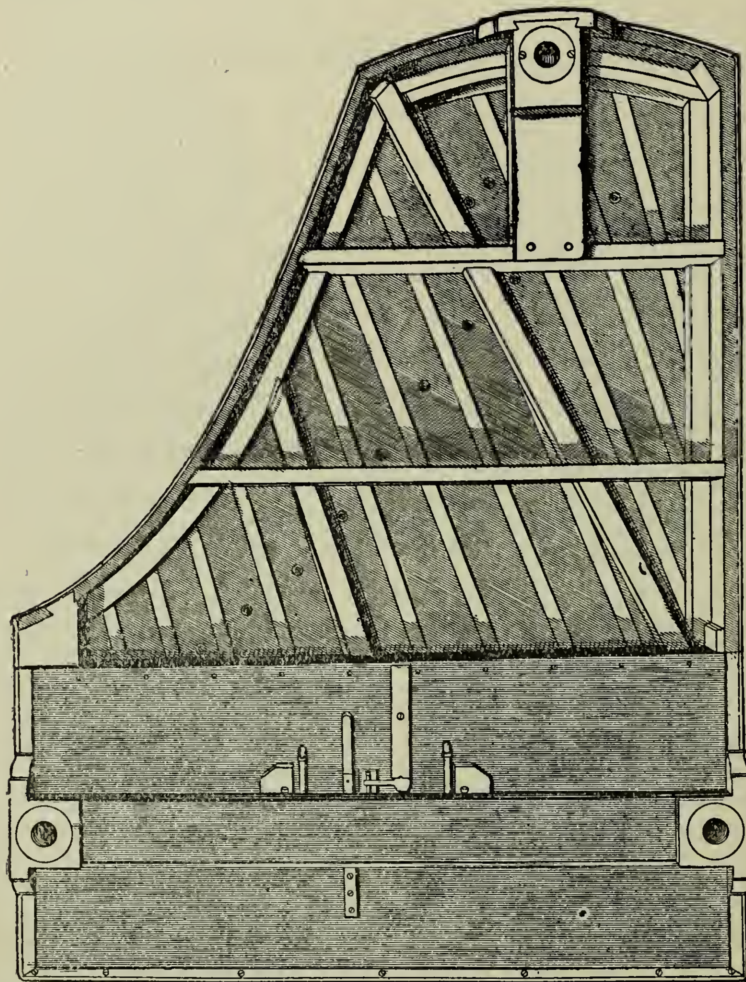


Fig. 2.—Showing the Underside of the Soundboard with the Belly Bars, which help to uphold it against the downward pressure of the Bridge. (Broadwood.)

board and the wrest plank there is a narrow space left, through which the hammers rise to strike the strings. Strings when set in vibration give but a poor sound of themselves, owing to the small surface they possess, wherewith to influence or set vibrating the surrounding

strata of air. But when the strings rest on a wooden bridge, the molecular vibration, communicated to them by the fingers through the keys and hammers, is transmitted

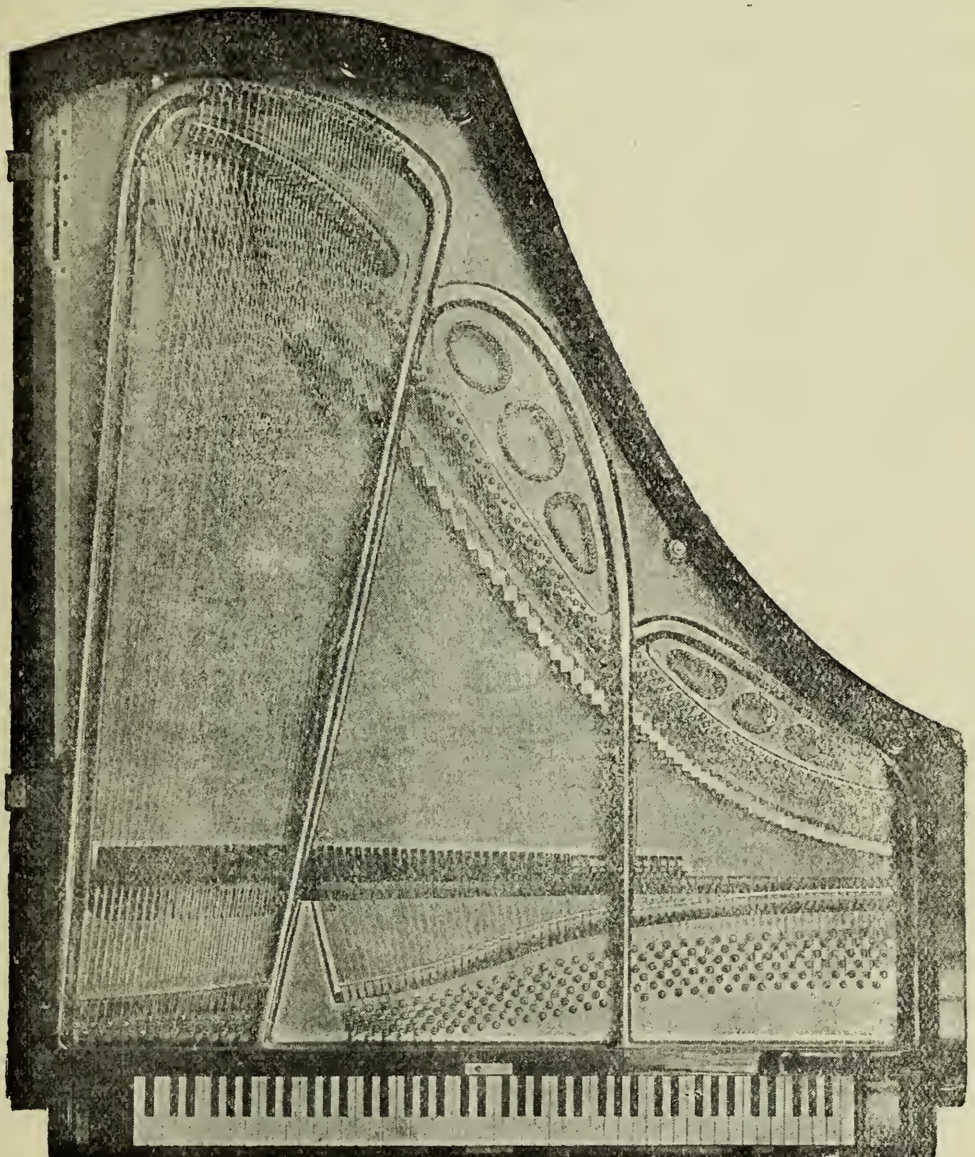


Fig. 3.—View of the Stringing and Framing of a Broadwood Grand.

by the bridge to the soundboard in shocks, which are repeated by the surrounding atmosphere: thus, are sounds produced, the intensity and force of character of which are directly governed by the quality of the blow or pressure brought to bear upon the the strings by the performer.

Proper vibrations being exceedingly undesirable in the soundboard, they are prevented by gluing thin ribs of wood —the belly bars—under it, of which the grain runs in a different direction to that of the soundboard. These bars give elasticity and help the formation of vibrating centres or nodes. The soundboard has to be tense to take up the vibrations initiated by the strings.

(5) The *bridges* (fig. 3) are two in number in the piano, each corresponding to a similar part of the violin, *i.e.*, (1) the belly bridge to the violin bridge, (2) the wrest plank bridge to the nut of the peg box of the violin (see the chapter on the violin). The first of these bridges, by means of which the vibrations of the strings are communicated to the belly is made of hard wood. The belly bridge is divided in all pianos, straight or overstrung. With the latter the divisions are disposed at differing angles, so that the bass bridge strings cross over the others in the lower part of the scaling. As a matter of fact, overstringing has entirely changed pianoforte construction, being in consonance with the later development of pianoforte playing. The steel strings are stretched over the longer part, and the covered bass strings (lying above the steel ones), rest on the shorter bridge, which in fig. 3 will be distinguished behind the others and nearer the end of the case. The wrest-plank bridge to which the strings are pinned down to prevent their being forced upwards by the blow of the hammer, is the point from which the vibrating length of the string is measured.

(6) The *action*, situated beyond the keys under the wrest plank, comprises the complex system of levers, hammers, checks, dampers, etc., which are set working when a key is depressed) see figs. 4, 5, 6). To describe minutely this action, which differs in details according to the various

makers, would be beyond the scope of this work, the interested reader is referred to the work by Mr. Hipkins, mentioned above. The hammers are covered with the finest white felt, and resemble in shape, a section out of the middle of a pear (see fig. 4). The checks may be seen in

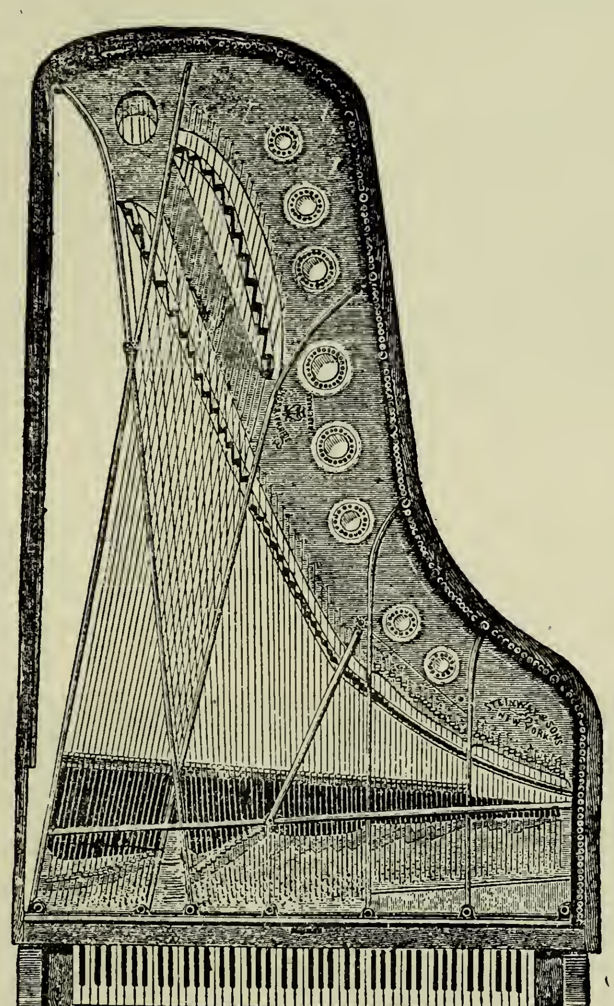


Fig. 3a.—View of the tringing and Framing of a Steinway Grand.

figs. 4 and 6, just behind the hammers. A damper made of thick felt lies over or under each set of three strings in unison (see fig. 6).

Production of Sound. By depressing a key with a finger, a system of levers is set working which raises the hammer and causes it to strike the strings and then rebound; in the

earliest action by Cristofori, there was nothing to control this rebound, and the key would have to rise to its level of rest before another sound could be elicited. The inventor

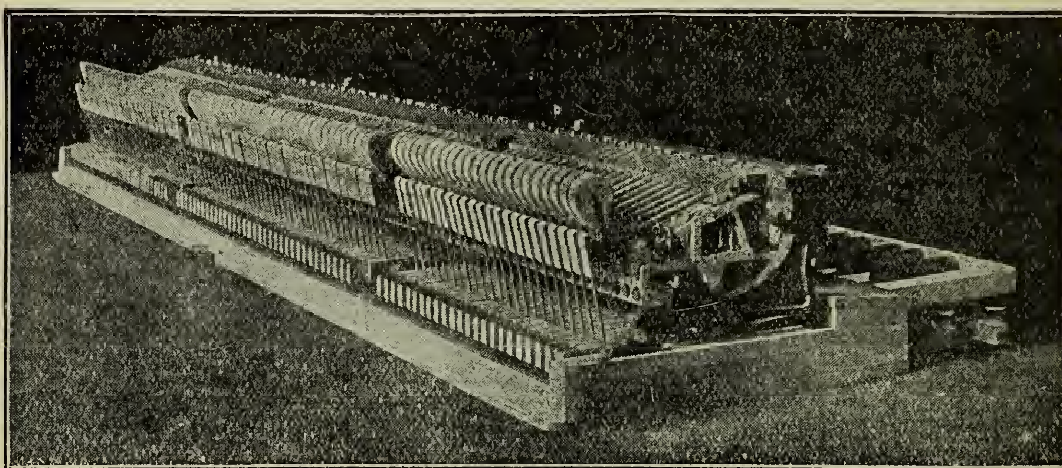


Fig. 4 —View of the Bass end of the Hammers and Checks. (Broadwood.)

noticed this defect, and remedied it by placing behind the hammer to control it a piece of hard leather which acted as a check. This check action has been developed and

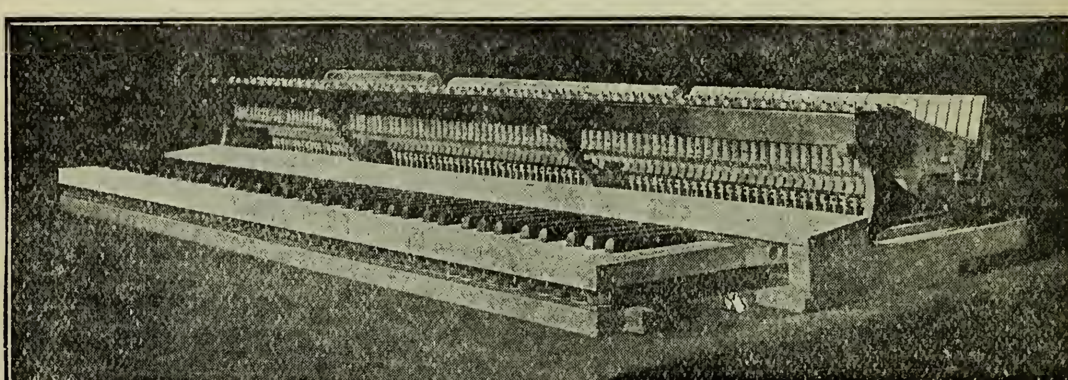


Fig. 5.—View of the Treble end, showing the Levers, etc. (Broadwood.)

perfected in our days, culminating in the *double escapement action.* The damper, which is automatically removed from the string as the key is pressed down, likewise returns to its normal position on the string as the key rises, and thus stops

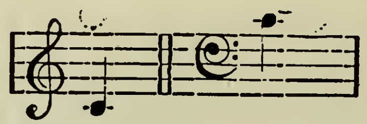
further vibrations after the finger leaves the key. Should the performer, however, wish these vibrations to continue, he can, by means of the right pedal, the "loud pedal" as it is frequently miscalled, which is indicated by "ped" under the note, remove the dampers and thus call out the sympathetic upper partials or harmonics of the strings. Great care is required in the use of the pedal to release it, as indicated by an asterisk, on change of harmonies, otherwise terribly discordant vibrations result.

The soft pedal, on the left side, indicated by "una corda" and released at the words "tre corda," shifts the hammers so that instead of three strings, they only strike two, formerly one; the soundboard which lies directly under the strings, sets up a series of sympathetic vibrations from the other two, which, gives a mysterious, veiled quality to the notes. Some pianos, instead of having this "shifting action," have a piece of felt, which being interposed by the action of the pedal, softens the impact, and deadens the sound.

Compass. The compass of a full-sized modern piano is seven and a quarter octaves, from 32ft. A, to $1\frac{1}{2}$in. C, according to organ builder's formula, but the deficiency in length in the bass strings is balanced by extra thickness, while in the treble, with modern high tension scale, the length is greater.

Two staves are required in notation, the bass and treble

clefs being used; no exact limits to each stave can be given but middle C



is the nominal boundary.

Quality of Tone. This is subject to so many conditions that it is impossible to do more than refer to a few of them. The tone varies according to the different makers,

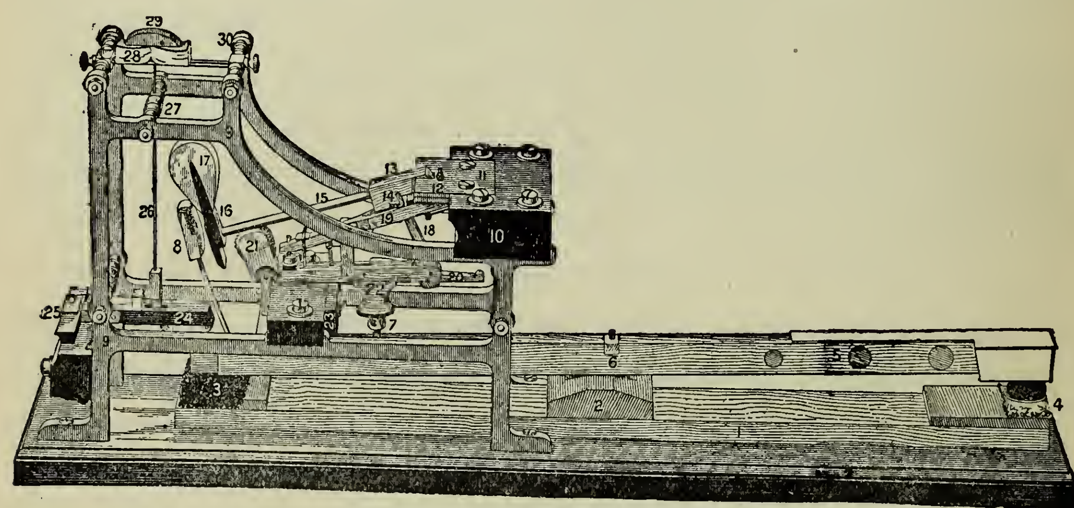
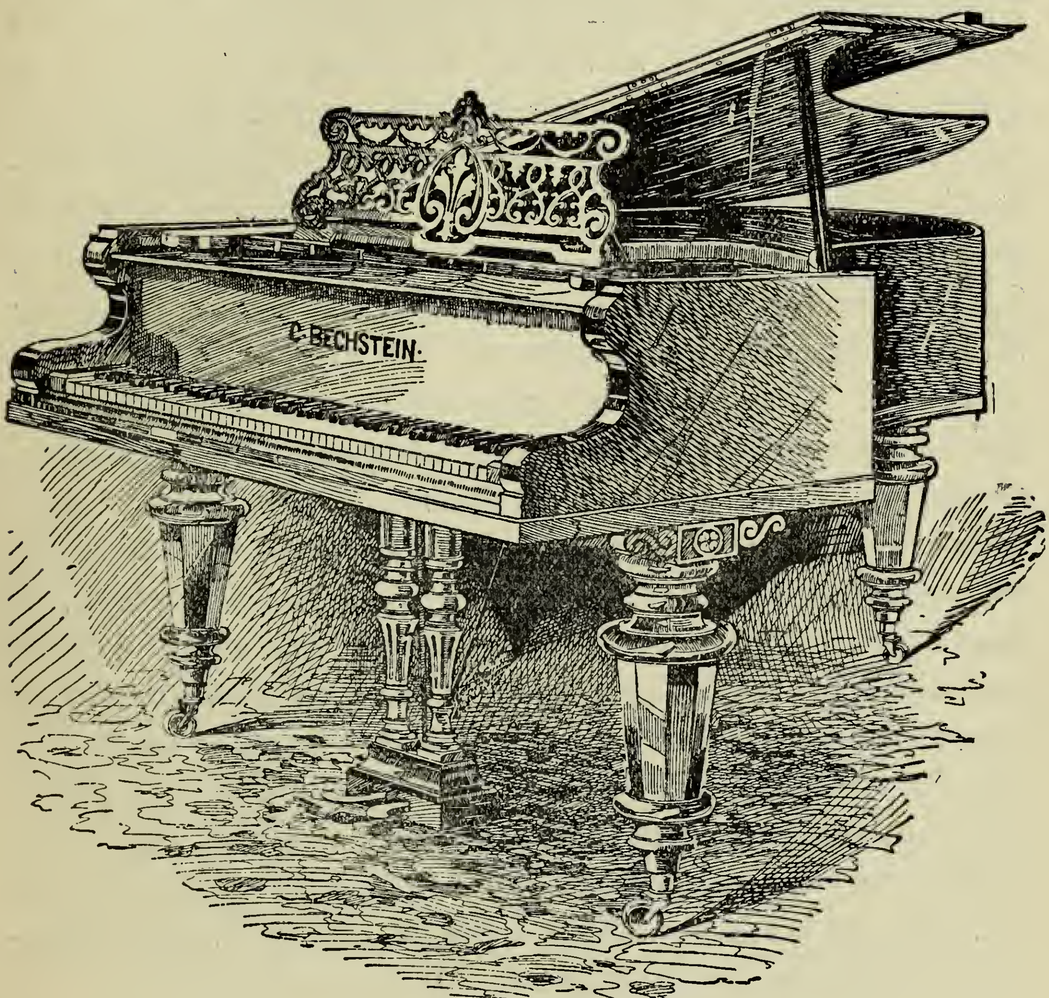


Fig. 6.—One note of the Action of a Grand Pianoforte. (Herz-Erard Broadwood).

some making brilliancy and clearness; some mellowness; others a sweet, singing tone their speciality, and so on. The various kinds of touches are more influential than anything else in producing tone (by tone, I mean breadth, depth and fulness of tone, which is quite independent of loudness). Given an instrument of the very best, two performers playing the same composition on it may give a totally different idea of its tone; the one producing plenty of sound in the forte passages, but leaving the ear unsatisfied, on account of a certain hardness and want of elasticity and continuity in the sound; the other performer on the other hand, giving the piano a voice, and making it sing out round, deep chested notes in which there is

no suggestion that the keys have been struck, but rather that the sound is being pressed out of the instrument. No satisfactory elucidation of the mystery of this difference of touch has been brought forward. The fact that so



Bechstein Grand Pianoforte.

many and minute differences of touch and shades of expression—nay, more than this, that the individual *feelings* of performers can be transmitted to the piano through the keys, will give an idea of the exquisite nicety and complexity of the mechanism which makes this possible.

Possibilities. There is no instrument which has greater possibilities than the piano. The rapid development of its

technique, and the wonderful improvements that have followed in such quick succession during its comparatively short existence, all point to a more and more glorious future for it. The fact that from this instrument, one performer can by himself produce the richest and most complete harmonies, and that he requires to devote so much intelligence and care to the study, in order to follow out simultaneously the many parts of these harmonies, instead of each part being taken by a different instrument; all this adds to its dignity and importance. On the name of Muzio Clementi rests the honour of having in 1770, founded a technique for the piano.

History. The piano being a truly complex mechanism, has many so-called prototypes in antiquity. The two chief classes of keyed predecessors are: (1) The *clavichord* in which the strings were struck from beneath by metal wedge-shaped tangents; although its tone was weak, it was sweet, sympathetic, and capable of the most delicate gradations of forte and piano; it was, on that account, a favourite instrument with Bach and his elder sons. (2) The *harpsichord*, with its varieties, the *spinet* or *virginals*, in which the strings were plucked by jacks, furnished with quills; its tone was louder and more penetrating than that of the clavichord, resembling that of the harp, but incapable of increase or decrease.

These two instruments in turn were evolved from the *psaltery*, an instrument having strings stretched horizontally over a soundboard, and plucked by plectra or quills; the harp supplied the idea of having a separate string for each note, and the harp-like shape of the scaling, the *monochord* of the Greeks and the Middle Ages (by which name clavichords were called in France, Italy and Spain at one time), supplied the idea of the bridges

dividing the length of the strings, whereas the *dulcimer* and *cembalo* of the Hungarians supplied the idea of the hammer action.

Explanation of the Numbers in the Diagram contained in Fig. 6 (above).

1. Bed of key frame.
2. Balance rail.
3. Back baize.
4. Front pin and baize.
5. Key.
6. Balance pin mortice.
7. Pilot.
8. Check.
9. Metal Standard.
10. Beam.
11. Beam brasses with continuous centre wire rendering the centres perfectly true.
12. Drop screw, preventing the hammer blocking.
13. Butt.
14. Notch (with fixed depth).
15. Hammer shank.
16. Hammer head.
17. Hammer felt.
18. Sticker, communicating the blow from the key to the notch.
19. Repetition lever which receives the weight of the hammer after a blow is struck and lifts it to allow of perfect repetition. N.B.—At the lower end is the button for regulating the height of the lever, and a regulating screw is also shown for graduating the strength of the lever spring.
20. Set-off arm, which causes the "escapement" of the lever from the notch so as to prevent the hammer blocking against the string.
21. Hammer rest.
22. Action carriage, showing the main lever spring which keeps the lever in the notch.
23. Back touch, preventing the back of the key from rising too high.
24. Damper lifter.
25. Damper lifter rail.
26. Damper wire.
27. Damper socket.
28. Damper felt.
29. Damper head.
30. A section of strings.

The earliest mention of the name "pianoforte" applied to a keyed instrument seems to be in 1598, in the letters of a musical instrument maker named Paliarino; addressed to Alfonso II., Duke of Modena. It would seem however, that the name was applied to some instrument of the clavichord or cembalo kind, for there is no mention of how the tone was produced, nor do we hear of the *piano e forte* again till 1711, in an account by Scipione Maffei, of Cristofori's "grave cembalo col piano e forte" Bartolommeo Cristofori was a harpsichord maker, of Padua. Invited to Florence by Ferdinando dei Medici and encouraged by him, Cristofori produced the first pianoforte, in which the two unison strings for each note were struck by hammers, and damped by pieces of cloth or felt; the check action was added afterwards. Others living at the same period claimed to be the real inventors, viz., Schroeter, of Dresden; Marius, of Paris; and Silbermann, of Freiberg; it is not impossible that the same idea may have occurred to more than one man quite independently; Cristofori was probably not the first who had attempted an instrument of this description; his invention was the record of years of study in his own lifetime and that of preceding generations. It is now proved beyond contention, however, that Cristofori alone was the inventor. John Sebastian Bach had two pianos by Silbermann submitted to him in 1726, but his judgment was unfavourable; the treble was too weak, the touch too heavy. We hear, however, that he played on one bought by Frederick the Great in 1746, it may be changing his opinion.

The first public mention of the pianoforte in England was in 1767, in a Covent Garden play bill, in Messrs. Broadwood's possession, in which it was announced as a new accompanying instrument. The chief beneficial and

lasting inventions for the improvement of the pianoforte are the following: (They are collected from various articles on the subject in Grove's "Dictionary of Music," and the "Encyclopædia Britannica," ninth edition, by Mr. A. J. Hipkins, and also from "History of the Pianoforte," by the same author, Novello, 1896).

What is now known as the *English direct action* was invented by a Dutchman, Americus Backers, about 1773, who was assisted by Broadwood and Stodard in making practical use of his invention; this action forms the basis of the English direct action used at the present day, as well as the double escapement action by the firm of Broadwood. The first real damper "loud" and soft pedals were adapted n 1703 by John Broadwood to the piano; they had been invented for the harpsichord instead of hand stops, by John Hayward about 1670. At first, the piano was looked upon as a variety of the harpsichord; its emancipation took place between 1770 and 1780, when it became an independent instrument, chiefly through the exertions of Muzio Clementi, who understood its capabilities.

In 1778, John Broadwood made a new scale grand, dividing the soundboard bridge (see construction 5). Stein, of Augsburg, invented the soft pedal with shifting action in 1789. Tension bars were first applied to a grand by James Broadwood tentatively in 1808, and, in 1827, he patented a grand in which tension bars and string plate were combined. In the meanwhile, the invention by S. Erard in 1808 of the double escapement action had been perfected and was patented in 1821 by his nephew, Pierre Erard; it has since been adopted in slightly modified forms by other manufacturers, amongst whom are Herz of Paris, Steinway, Broadwood, and Bechstein of Berlin. The hammer touch ultimately brought about a double improve-

ment in playing and construction: (1) In using the wrist to soften the blow which the indifferent and thin wire strings were too weak to bear; (2) By giving the idea of using an iron frame to which to fasten the strings, as the wooden frame would not bear the increased tension of stronger and thicker strings; this was W. Allen's patent of 1831.

Boehm, the flute maker, was the first to have the idea of overstringing pianos in 1831, but the invention as applied to grands was patented by Steinway & Sons, America, in connection with a cast frame in 1859.

In 1838, the harmonic bar was introduced by Pierre Erard; by making the treble part of the instrument almost immovable, it favoured the production of the higher harmonics in the treble. The firm of Broadwood have since made use of a similar bar across the whole length of the wrest plank. In 1847, Henry F. Broadwood invented a grand having an entire upper iron framing with only two tension bars. Pursuing this rejection of metal bars, Mr. Henry J. Tschudi Broadwood patented in 1888, a barless grand, which is now proved to stand the modern tension satisfactorily. It is in the reduction of weight that this invention will be valued in the near future.

The harpsichord had a place in every orchestra till the end of the 18th century; the last great public performance at which it was used being that of Mozart's "Magic Flute," in 1791; after that time it was superseded by the pianoforte in the orchestra, and until 1820, the director of the opera or concert sat at the piano, following from the score and occasionally joining in; the first violin or "leader" gave the *tempi* with his bow. Spohr was the first to break through this custom at a Philharmonic concert, in 1820, when he boldly stood up with a bâton, faced the orchestra

with the score on the desk before him, and beat time regularly from beginning to end of the symphony. This method of conducting was found so successful that it was immediately adopted in England.

CHAPTER XXVI.

The Harp.

French, Harpe. *German*, Harfe.
Italian, Arpa or Harpa.

The harp belongs to the class of stringed instruments of which the strings are twanged or vibrated by the fingers.

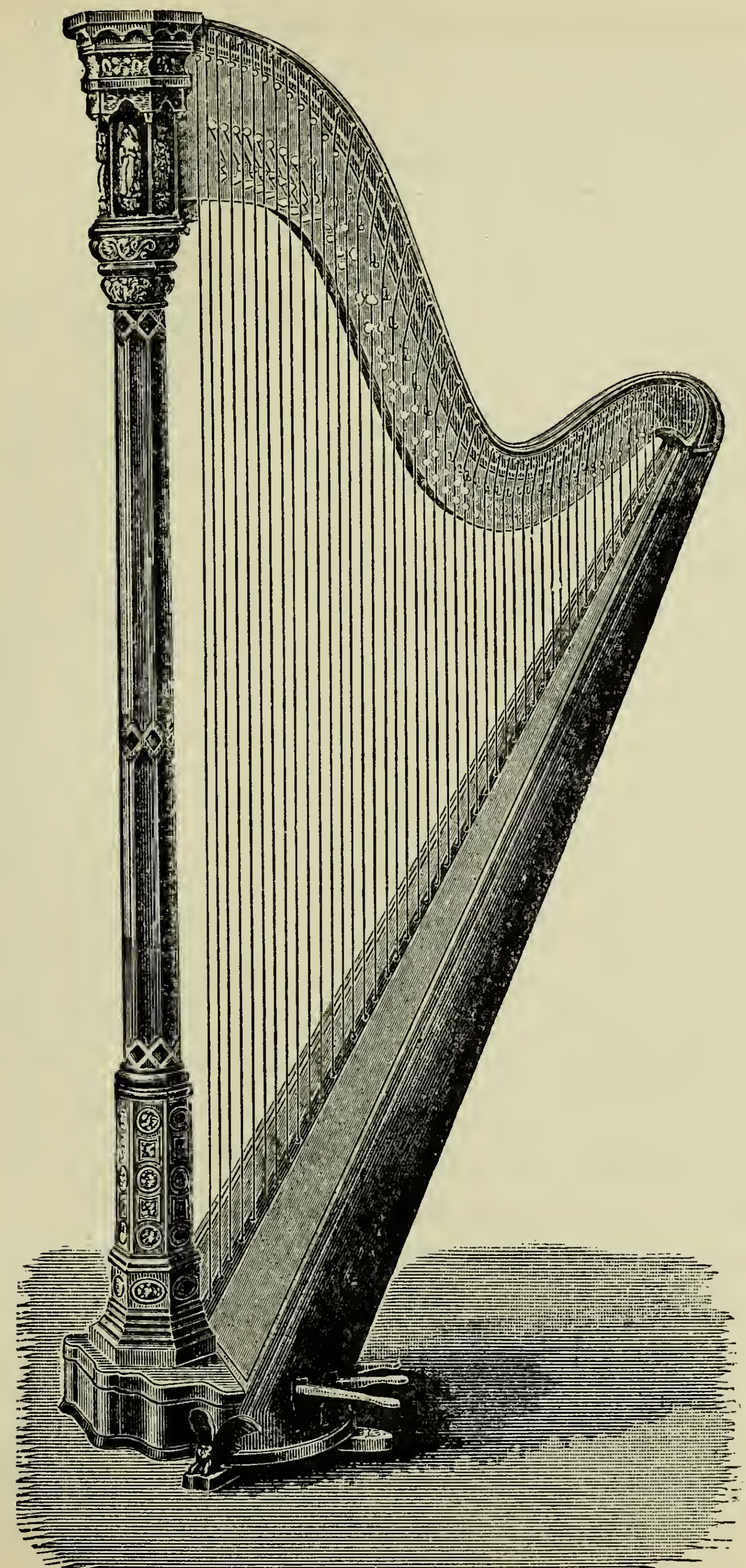
Construction. The harp is an instrument of triangular shape of the most elegant and beautiful proportions. Its various parts are (1) the pedestal or *pedal box*, on which rest (2) the *vertical pillar*, and (3) the inclined convex *body* in which is set the *soundboard;* the pillar and body uphold (4) the curved *neck* with (5) the *comb* which conceals the mechanism for stopping the strings. (1). *The pedestal* or *pedal-box* forms the base of the harp, and in both single and double action harps contains seven pedals; the difference between the two actions is that in the single the pedals only raise each string one semitone, being capable of one drop only into a single notch; whereas in the double-action harp, the pedals, after a first drop can by a further drop into a second notch shorten the string a second semitone, thus making each string serve for flat, natural and sharp. Each of the seven pedals acts upon one note of the

diatonic scale of C flat major throughout the compass. This scale was not chosen arbitrarily, but out of necessity, on account of the construction of the harp with double action. The pedals remain in the notches until released by the foot, when a spiral spring sends the pedal back into its normal position; this spring can be seen lying under the pedal by turning up the harp. The pedestal, as its name indicates, serves merely to allow of the harp standing upright and to hold the pedals, hence its other name *pedal-box*.

(2). The *vertical pillar* is a tunnel in which are situated the seven rods worked by the pedals, which set in motion the mechanism situated in the neck of the instrument. The pillar *apparently* rests on the pedestal at the base of the body; in reality it rests on a shoulder of brass very firmly screwed to the beam forming the lowest part of the body; and the pedal box and its cover can be removed without in the least disturbing this connection. (3). The *body* or soundchest of the harp is in the shape of half a cone; Erard was the first to make it in two pieces of wood, generally sycamore, instead of in staves like that of lutes, mandolines, etc.; the flat *soundboard* is of Swiss pine. The body is strengthened on the inside by ribs, and at the back are five soundholes, which used in older models to be furnished with shutter-doors opened at will by the swell pedal (the fourth from the left, worked by the left foot). As the increase of sound obtained by means of the swell shutters is practically *nil*, they have been discarded in the newest models. After making a knot at the end of the strings, they are inserted through holes in the centre of the soundboard, and kept in their places by means of pegs each provided with a groove in which the string lies. 4). The *neck* is a curved piece of wood which rests on

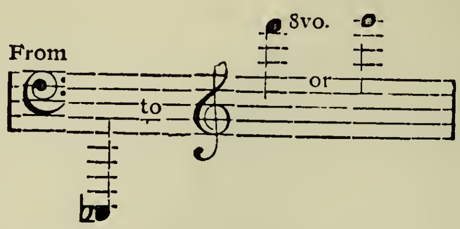
the body at the treble end of the instrument, and joins the pillar at the bass end. In it are set the tuning pins round which the strings are wound. The neck further comprises two brass plates, sometimes called the comb, which conceal part of the mechanism for shortening the strings, and producing additional semitones by the agency of the pedals. On the front brass plate (to the left of the player are to be seen first a row of brass bridges, against which the strings rest on leaving the tuning pins, and which determine the length of the string from the peg in the soundboard; secondly the two rows of brass discs called forks, connected by steel levers, each disc furnished with two studs for grasping the string and shortening it. If you watch these while the harp is being played, you will see that when the pedal is depressed to first notch, the lower disc turns a little away on an arbor or mandrel, still keeping the studs clear of the string, the external steel levers are set in motion, and the result is that the upper disc revolves also till the string is caught between the two studs and shortened; if the same pedal be pressed down to the second notch, the lower disc revolves again till the string is a second time grasped and shortened, the upper disc remaining motionless the while. The reason for this is that each pedal is a lever set upon a spring, and by depressing the pedal, the pedal rod in the pillar is drawn down, setting in motion the chains and arbors connected with its upper extremity and situated within the brass plates, with the visible result described above.

The strings are of gut in the middle and upper registers, and of covered steel wire in the bass; the C strings are red and the F blue; the strings are usually forty-six in number, and are arranged in the diatonic scale of C flat major.



The Double Action Harp by Erard

The compass of the harp is usually 6½ octaves.



The double stave is used in notation with the treble and bass clefs.

The old single action harp, before the time of the Cousineaus, used almost always to be tuned in the key of E flat major.

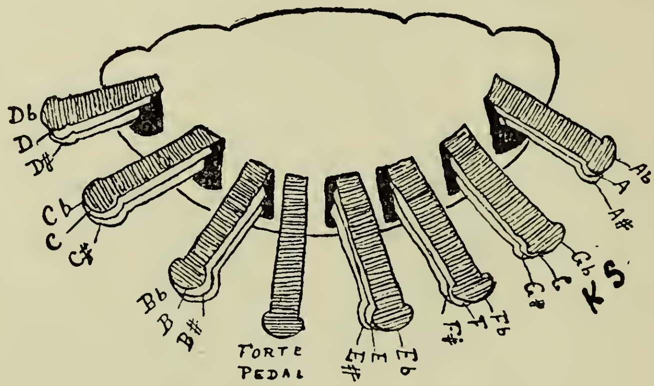
Production of Sound. The modern harp with double action is the only instrument with fixed tones, not determined by the ear or touch of the player, which has separate notes for sharps, flats and naturals, or in other words, on which the enharmonic scale can be shown and heard, so that the appreciable difference between, for instance, F sharp and G flat can be detected. The harp in its normal condition, it has just been stated, is tuned to C flat major, but the performer can transpose it himself in a few seconds by means of the pedals, into any other key; each of the seven pedal influences one note of the scale throughout the pitch, beginning at the left side with D, C and B, worked by the left foot (the pedals are called by their note names without reference to the fact that the harp stands normally in the key of C flat major), the swell or crescendo pedal now intervenes, continuing towards the right, the E, F, G and A pedals worked by the right foot. The pedals, on being pressed by the foot, sink at will into a first notch, raising the pitch of all the notes of that name a semitone, or into a second notch, raising the pitch a whole tone. The pedals remain in the notches until released by means of the foot, a spring causing them to rise to the

next notch natural or flat. On the D pedal being lowered into the *first* notch, the D flat becomes D natural, and into the *second* notch D sharp, and so on for all the pedals. If a piece, therefore, be in D flat major, the instrument is transposed to that key by depressing the F and C pedals to the first notch; if the piece be in E major, the E, A and B pedals, must be slipped into the first notch natural, and those of F, G, C and D to the second sharp, and so on through all the keys. Accidentals or changes of key are easily made by means of the pedals, providing the transition be not too sudden. The reader will see that it is quite easy to transpose any piece of music into another key on the harp, as the fingering of any given passage is absolutely the same in all keys. Although the harp is thus able to transpose into any key at will, yet it is not called a transposing instrument, since its part in the score sounds exactly as written.

Only the thumbs, first, second and ring fingers are used to vibrate the strings, the little finger not being either long or strong enough for the purpose.

Quality of Tone. The quality of tone on the harp does not vary much in the different registers, but its tone is most brilliant and full in keys with flats; for then the strings are open, and not shortened by the pedals; in those with many sharps, its tone becomes more penetrating but less sweet; it might be characterised as resonant, but weak in the bass for any but solo purposes, clear and penetrating in the middle and treble, and very hard and dry in the last octave-and-a-half. When used in an orchestra with other instruments playing anything but *pianissimo*, the lower register cannot be heard, and the notes of the upper, when reinforced by flutes, piccolos, or oboes, give incisiveness and crispness to the parts, but the actual notes of the harp are

indistinguishable. The composer is therefore dependent on the middle register for his tone colour, and even then the accompanying parts must not be too heavily orchestrated, for harps cannot cope successfully with strings played *sostenuto*.



The Harp Action of the Pedal.

Various effects, however, can be produced on this instrument (1) by harmonics; (2) by damping; (3) by guitar tones; (4) by glissando.

(1) *Harmonics* are produced by resting the ball of the hand on the middle of the string and setting it in vibration by the thumb or the first two fingers of the same hand; the notes thus produced are of a very mysterious and beautiful tone; they are only used in the middle register, as the upper harmonics are wanting in tone. Two or three harmonics can be sounded together with the *left* hand (as it plays the lower register), and by using both hands, of course, as many as four are possible.

(2) *Damping* is easily effected by laying the palm against the string in the bass and the back of the finger in the treble. (3) *Guitar* or pizzicato notes are obtained by twanging the strings sharply in their lower part, near the soundboard, with the nails. (4) The *Glissando* is effected by sliding the thumb or same finger along the strings in quick succession;

and this does not necessarily produce a diatonic scale passage, for the harp can, by means of the pedals, be tuned beforehand to chords such as that of the diminished or dominant seventh, etc., etc.

Possibilities. It is possible on the harp to play all diatonic scale and arpeggio passages—no chromatic, however, except in very slow tempo, on account of the action of the pedals which requires time; chords of as many as four notes in each hand, shakes (in the orchestra these are only effective in the upper register), turns, successions of double notes in 3rds, 6ths, and 8ves, can be easily played by using both hands, and are just possible in some cases to good players with one. The same note can be repeated slowly or quickly; in the latter case only by tuning the next string to a duplicate note, so as to give the string time to vibrate; for instance, if a repetition of G sharp be required, the G pedal is depressed to the second notch, and the A left in its normal condition, or upper notch, so that both strings *practically* sound the same note; the repetition is then made by two different fingers on different strings; the crescendo and diminuendo can also be effected. Although G sharp and A flat are practically the same on the piano—for instance, and are called "synonymous," yet they are not quite identical; there is a small but appreciable interval called enharmonic between them.

Origin. The origin of the harp is anterior to the earliest records of civilization and may have been suggested by the bow, since in the earliest representations of Egyptian harps, there is merely a bow to which are fastened several strings, instead of a distinct neck and body. No Egyptian harp has been found with a pillar. Bruce was the first to discover that this instrument was known to the Egyptians, for he found a painting on a wall at Thebes, in which are depicted

two musicians playing harps which must have stood about 6ft. high; one of these is bow-shaped and the other triangular; neither has a pillar, but in both the pedestal is highly ornamented and carved. This painting is assigned by Egyptologists to the 13th century B.C. An instrument having affinities with both primitive harp and nefer (a sort of guitar) and called a *nanga*, was bow-shaped, with a boat-shaped soundchest, a parchment or skin soundboard, down the centre of which one end of the string was fastened to a stick, showing the harp principle, whilst the other was wound round pegs placed in the upper part of the bow; illustrations show us that this primitive harp was held horizontally on the shoulder in what must have been an exceedingly uncomfortable attitude. Specimens of nangas, dating from about 1500 B.C., can be seen at the British Museum in the Fourth Egyptian Room, Case A.

The Assyrian harp was similar to the Egyptian, but less graceful; the sound-chest was placed uppermost, and the bar for attaching the strings at a lower angle; the pillar was absent. Delineations of these are to be seen in the Nimroud Gallery at the British Museum. Early Irish and Welsh harps likewise have no pillar. The Irish harp of the 17th century had a straight soundboard, a curved pillar, and the neck was higher at the treble end than where it meets the pillar. The Welsh harp of the same period had a perpendicular body, a straight pillar of unusual height, so that the neck ascended from the body to it in a graceful curve.

During the Middle Ages many expedients were tried to obtain accidental semitones, but none proved satisfactory. Chromatic harps were attempted by German makers of the 18th century. About 1720, the first attempt at pedal mechanism by means of crooks pressing on the strings was

made in Bavaria by Hochbrucker, but the system was too faulty to become general. Two Frenchmen, named Cousineau, were the first to make harps without crooks and yet with stopped semitones, by curving the neck to determine the proportions of the strings; they seem to have had an idea of double action pedals in 1782, but it was imperfectly carried out, and the Revolution put an end to their work for the time. It was Sebastian Erard who gave us the perfect harp with double action, patented in 1809.

Over three hundred years ago, in 1581, when orchestras were in their infancy, we hear that in the "Ballet Comique de la Royne," performed at the Château de Moutiers, on the occasion of the marriage of Mary of Lorraine with the Duc de Joyeuse, harps formed part of the orchestra or *concert de musique*. Be that as it may, the use of the harp was not general in the orchestra then; the old masters never scored for it, and it is only since about the thirties of the last century that it has found a place in orchestral music. At the present day there is at least one in every orchestra to be used when the scores require. As many as six are required and used at Bayreuth for the "Ring of the Nibelung."

CHAPTER XXVII.

Two New Harps.

By Messrs. Lyon & Healy and
Messrs. Pleyel, Wolff & Co.

When Sebastian Erard patented the double-action harp in 1810, it was thought he had put the seal upon the history of the construction of the harp, as the Cremona masters did upon that of the violin, but a few years ago two harps attracted attention in London and elsewhere, claiming, the one many substantial and important improvements in the old system, and the other the invention of a totally new one, as simple as it seems ingenious. Whether either of these harps will effect what it aims at —no less a task than to supersede all previous makes—is a question which only time can answer. Those who considered the Erard double-action harp perfect in its construction seem to have had reason on their side. The instrument which existed centuries before our era was absolutely simple and guiltless of mechanism; it had not even a pillar, and each string gave but one note. At the beginning of this century the instrument was provided with

complex and hidden mechanism which enabled the performer to modulate into every key, and besides to sound the enharmonic intervals throughout the compass; the instrument presented no insuperable difficulties to the learner, the tone was clear and pure, and the possibilities of its technique were many and various, if not all-satisfying; it fell short in two particulars: no *legato* was possible, as indeed is the case with all stringed instruments of which the strings are twanged; secondly, although each note could be played natural, sharp or flat, a chromatic scale was only possible in very slow time, indeed, its leisurely pedal mechanism made it imperative that those who scored for the harp should thoroughly understand its construction. Other disadvantages of the instrument were that it so easily got out of tune, and that the strings constantly required renewing owing to the action of the forks in shortening them for the semitones (see page 142); when any little thing went wrong in the mechanism, there was nothing for it but to send the instrument to the maker for repairs. Eighty years elapsed without substantial alterations; the history of the construction of the harp remained the same; before the old favourite make can be dislodged from its present position, it will have to be proved that the old disadvantages have been overcome, or that a new field of technique has been opened out.

A simple statement of the claims of these two harps will enable the reader to form an idea of their merits, and as real excellence always finds its way to the front, time will do the rest.

CHAPTER XXVIII.

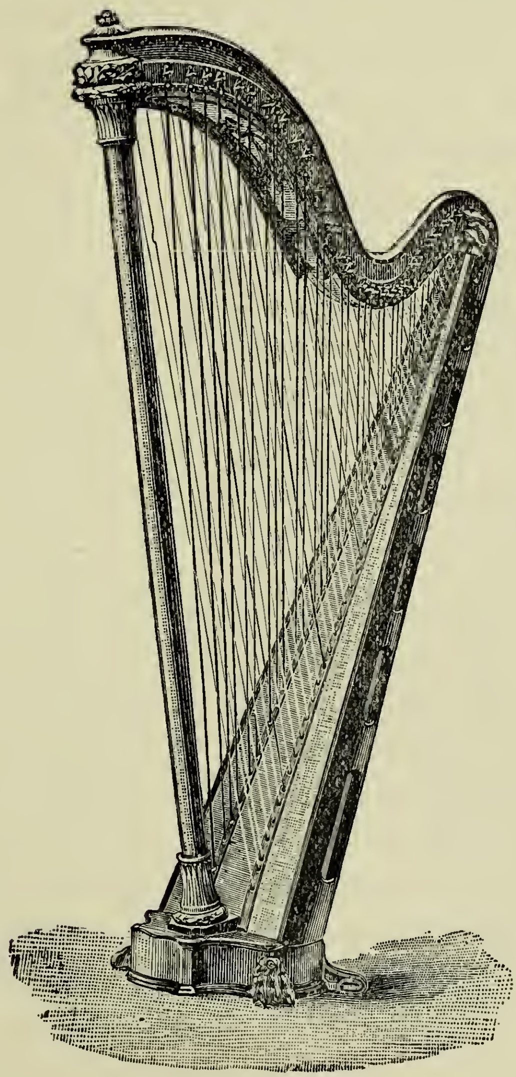
The Chromatic Harp.

The very word chromatic, as applied to a harp, seems revolutionary; it would mean a totally new and extensive répertoire for the instrument, and if this harp fulfils its promises, this will indeed occur; the technique besides, will be entirely altered.

This harp is still of too recent a date and too untried for it to be possible to do more than give a very superficial account of it.

Origin. The principles of the piano have been borne in mind in constructing this harp, which is practically without mechanism. Henry Pape, a piano manufacturer, had in 1845, conceived the idea of a chromatic harp, of which the strings crossed in the centre as in the instrument under consideration, and a description of it was published in the shape of a report; it was, however, not considered successful and nothing more was heard of the subject until Mr. Lyon, manager of the firm of Pleyel, Wolff and Co., took up the matter, and brought out the present harp.

Advantages Claimed. The advantages this harp claims are (1) that the whole pedal mechanism of the old harp has been discarded; (2) that the metal framing insures the strings keeping in tune as long as those of a piano; (3)



The Chromatic Harp.

that from its absence of mechanism there is nothing to get out of order; (4) that its technique is very easily acquired.

Construction. This harp consists (1) of a pedestal on castors; (2) of a steel pillar which upholds (3) a wide neck containing two brass wrest-planks on which two rows of

tuning pins are placed; (4) of a sound-chest in which is firmly riveted the steel plate to which the strings are fastened, and of a soundboard pierced with eyelet holes, through which the strings pass to the string-plate.

There is a string for every chromatic semitone, and the instrument is set in the key of C major, the white strings representing the white keys on the piano keyboard and the black strings corresponding to the black notes. The tuning pins for the black keys are set in the left side of the neck in alternate groups of 2 and 3, and those for the white in the right side in alternate groups of 3 and 4; the strings cross half way between neck and soundboard, which is the point at which the fingers twang them, thus enabling the left hand to play black notes above and white below the crossing, and inversely for the right hand. The notes are tuned to a set of 12 tuning buttons, each of which on being pressed gives out one note of the chromatic scale tuned to the pitch of the diapason normal; these buttons are placed in the neck of the harp.

Possibilities. This chromatic harp allows of an extensive répertoire, it being in fact possible to play on it any piece written for the piano, so far as the actual notes are concerned, though not as written, of course, the *legato* style being impossible still; one can hardly imagine that Bach's fugues (which have been played on this instrument) would sound well or indeed have much meaning on the harp. This new invention would considerably enlarge the technical possibilities of the instrument, but its extended repertoire, to satisfy the requirements of art, must be written specially for it.

To facilitate rapid execution, a damping pedal has been added which lowers upon the strings a large damper placed under the neck.

The chief disadvantages of this harp (and what new invention is without?) would seem to be (1) that the fingers work in two different planes; (2) that the very fact of the metal frame and pin-plate (the latter placed *within* the soundboard), rendered necessary by the increased tension of the extra strings, would probably tend to weaken the tone of the instrument.

The Lyon and Healy Harp.

To the casual observer, this harp does not differ from the Erard double-action, unless it be that in some models the soundboard is made wider for the purpose of strengthening the resonance power of the upper octaves. The chief advantages it claims are: Great solidity of construction ensuring durability, a singing tone, great responsiveness to the touch, and finally, an original method of construction on an interchangeable plan, so that any part which happens to break or get out of order, can be replaced by post from the factory, thus rendering the transportation of the harp itself for repairs unnecessary. The improvements in construction which produce the above results are as follows:

(1). By means of a simple and original manner of disposing the steel links (called chains), which are connected by lever systems to the rods set in motion by the pedals, each disc wholly independently of its octaves, can be adjusted at will.

(2). Instead of the pedal rods being placed loosely in the pillar side by side with only tape wound round them, the rods are placed inside tubes which form a metal bearing these tubes being brazed together in the proper direction and position, the tubes are then fastened solidly into the pillar; all rattling and sticking is thus obviated.

(3). With regard to the arbors or mandrels which carry

the discs and studs by means of which the strings are shortened to produce the semitones, there are important alterations. The parallel holes in the brass plates, one-tenth of an inch thick, which form the bearings for the arbors, are subject to wear, and after a while these bearings become worn and have to be made smaller by means of a centre punch.

The Lyon and Healy patent adjustment has a mandrel terminating in a taper collar which the tension of the strings on the disc cannot succeed in loosening, for as the hole grows larger the taper mandrel fills it up. The other end of the arbour rests on a spiral spring which holds it in its place with a yielding pressure which adjusts itself automatically to any slight change of form the metal frame may assume under climatic or other influences.

(4). The body or soundchest is now firmly connected with the pillar by means of two steel stirrups, which are rivetted to the frame situated in the lower extremity of the body before the soundboard is screwed into its place; the other end of these stirrups is firmly fixed under the base board of the pillar, thus bearing the strain of the tension of the covered steel and compound strings, which frequently causes ordinary harps to collapse at this joint.

(5). By a new method of ribbing the body of the harp, it has been found possible to construct the swell door in one instead of five pieces.

(6). An original device called a spreader, placed within the soundchest, prevents the breaking up of the soundboard near the point where the gut and compound strings meet, and allows a free vibration of all the parts, thus producing a greatly increased volume of tone.

(7). The stringing of this harp is accomplished without pegs, except in the upper octaves, the string being passed

through a small eyelet hole, and kept in its place by means of a knot.

The compass, quality of tone, and the possibilities of this harp remain practically the same as for Erard.

SECTION III.

INSTRUMENTS OF PERCUSSION.

INSTRUMENTS of percussion are divided into two distinct classes (A) those of definite musical pitch which contribute definite notes to the harmony of the score, and (B), those of indefinite pitch which serve to mark the rhythm and add brilliancy and lightness to the orchestra.

(A) of definite musical pitch.

Kettledrum.
Bells.
Pavillon Chinois.
Glockenspiel.
Harmonica.
Parsifal Bells (designed by Dr. Mottl).

(B) of indefinite musical pitch.

Bass Drum.
Side Drum.
Triangle.
Cymbals.

CHAPTER XXIX.

The Kettledrum.

German, Pauken. *French*, Timbales. *Italian*, Timpani.

The Kettledrum belongs to the class of instruments of percussion having a definite musical pitch.

Construction. This instrument consists of a piece of vellum stretched tightly over a hemispherical shell or pan of copper or brass, by means of screws working on an iron ring which fits closely round the head of the drum. The vellum is slackened or tightened at will, thus producing any one note within its compass of an octave. As each drum can give but one note at a time, and it takes some little time to alter all the screws, two or three kettledrums, often more, each tuned to a different note, are used in an orchestra or band.

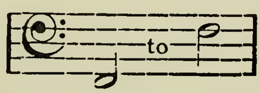
Various mechanisms have been tried to facilitate the changing of pitch, such as working the screws by means of a pedal. *Potter's Revolving Kettledrum* accomplishes this object by means of a screw which causes the ring to revolve,

and to tighten or loosen the vellum at will; in spite of these improvements, the old-fashioned, simple model is still the most used in England.

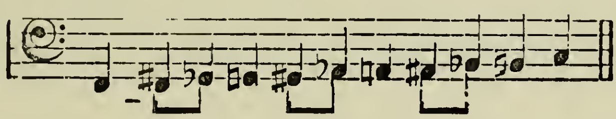
This is the only instrument of the drum family which can be tuned to any definite musical sound, and its notes are as definite as those of the double bass.

Production of Sound. Two sticks are used to play the kettledrum, and these are of various kinds; the best are made of whalebone for elasticity with a small wooden button at the end, covered with a thin piece of fine sponge; others have a felt or indiarubber knob; some are even made with a wooden uncovered knob, but are only used in exceptional cases to produce a harsh noisy tone. The kettledrum is struck at about one quarter of the diameter from the ring.

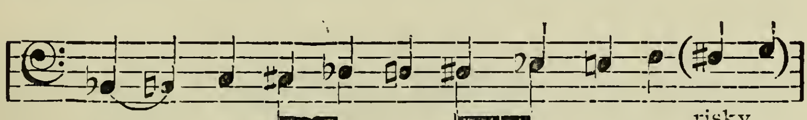
Compass. The kettledrum can be tuned to any note within the compass of the octave.



The larger instruments, which it is not advisable to tune below F if a distinct and definite note is required, taking any one of the following notes.



and the smaller, which, if tuned higher than the following limit would sound poor and thin and might cause the vellum to burst, are tuned to the following:



When there are only two drums, the tonic and dominant, or the tonic and subdominant are generally chosen, being

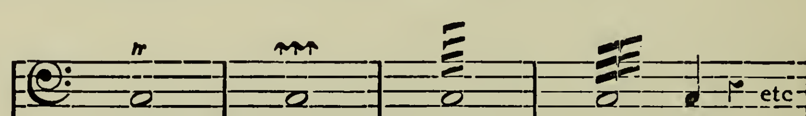
the notes which enter into the composition of most of the chords of the key. The bass clef is used in notation.

The kettledrums used to be treated as transposing instruments, the music being written as for the horn in C, the key to which the drums were to be tuned being indicated in the score; now, however, composers write the real notes for them.

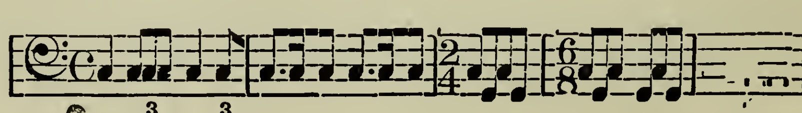
Quality of Tone and Possibilities. The tone of a good drum in all but its extreme notes is sonorous, rich and powerful; a harsh, overpowering quality can be obtained when noise rather than music is required, by using uncovered drumsticks.

The drums can be covered or muffled by placing a piece of cloth over the vellum to deaden the sound; this device produces a mournful lugubrious tone most effective in orchestration, and is indicated in the score by *tympani corperti, timpani con sordini, timbales convertes* or *gedämpfte Pauken.*

By judicious scoring for this instrument, beautiful effects can be obtained in crescendo and diminuendo, in forte and pianissimo passages, by the rolls written:



and produced by very rapid alternate strokes with both sticks. A great variety of rhythmical figures, on one note, or in intervals with two or more notes can be produced, for example:



Passages in double notes such as the following, as well

as many more complicated, will give an idea of the capabilities of an instrument whose technique is even now developing.

This instrument has been used very effectively by Mozart, and Mendelssohn, and Berlioz has introduced into his Requiem as many as eight pairs of drums, which require as many as ten drummers. Beethoven was the first to see that they might be used also as solo instruments. The term drum used by musicians means the kettledrum, never the bass or side drum.

Origin. From Egyptian, Assysian and Indian sculptures, we have full evidence of the great popularity of drums of all kinds among the ancients. How the kettledrum reached Europe is a matter of some conjecture; some suggest through the Romans, as the Greeks knew the side drum which they called tympanum. They or the Romans may also have known the kettledrum; others attribute its introduction to the Moors of Spain; it was used in Germany from early times; the first mention of its use in England appears to be in Froissart's description of the entry of Edward III. into Calais in 1347. Of the words used for drums in the middle ages *nacaire*, *tambour*, *tympan* and *tambale* (or tabale), all but tympan, from the Latin tympanum, are derived from the Arabic words tambur tubal and neggareth, which seems to point to a moorish origin of the kettle drum. The next mention of the use of this instrument in this country occurs about 1606, in Nicholls' "Progression of James I"; "The King of Denmark's drume, riding upon a horse, with two drumes, one on each side of the horses' necke, whereon he strooke two little mallets of wood,

a thing verie admirable to the common sorte, and much admired."* The earlier manner of bearing the instrument was to suspend it from the neck of a man, who on the march bore it on his back in front of the drummer. In a miniature of an illustrated manuscript at the British Museum, an Eastern Banquet is depicted in which the Potentate is enjoying the music of various instruments, and among them two kettledrums strapped to the back of a Nubian slave; this manuscript (Add: 27,695), dates from the fourteenth century, and is by a skilled Genoese. The kettledrum was first used in an orchestra by Sully, in the reign of Louis XIV., and it has kept its place ever since.

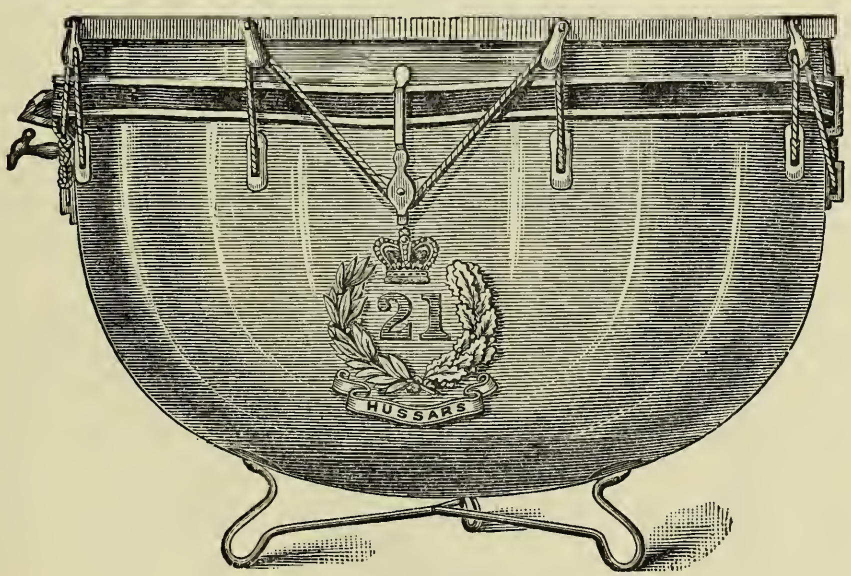
* (See "Catalogue of Musical Instruments," by Captain Day.)

CHAPTER XXX.

Potter's Kettledrum with Instantaneous System of Tuning.

(G. Potter & Co.)

It will be seen at very first sight from the accompanying illustration of the kettledrum, showing the mechanism for in-



Kettledrum (21st Hussars.)

stantaneously tuning it to any note within its compass, that it differs substantially from the ordinary tympani.

Construction. The construction differs from that of the

kettledrum, tuned by means of screws just described, in the following particulars. A simple mechanism in the in-

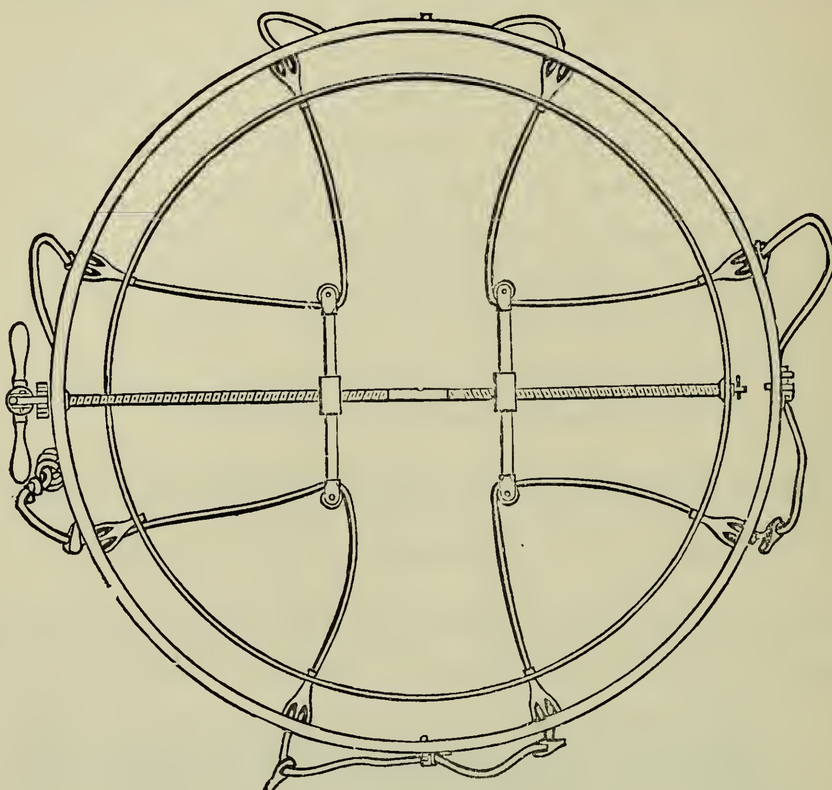


Diagram A.

terior, consisting of a system of cords regulated by screws and rods (shown in diagram A), is worked from the out-

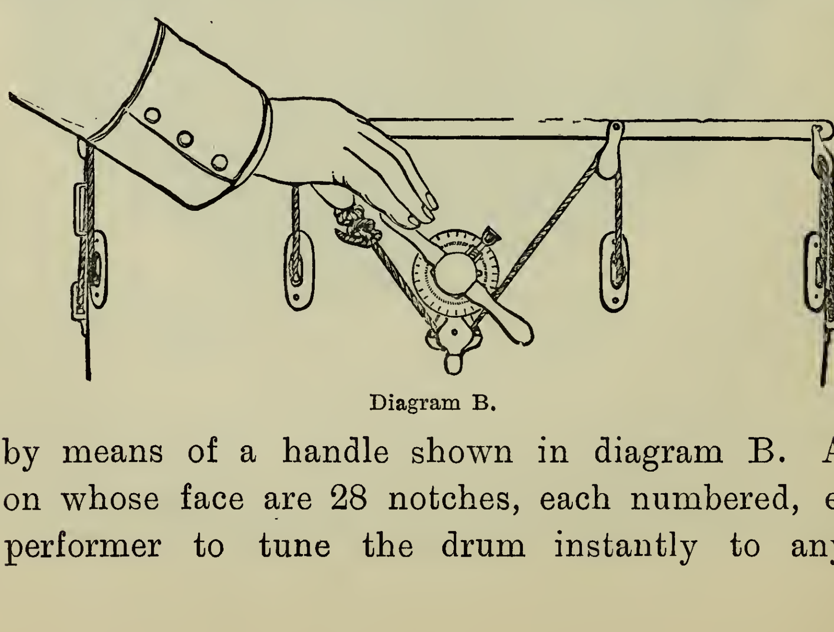


Diagram B.

side by means of a handle shown in diagram B. A little dial on whose face are 28 notches, each numbered, enables the performer to tune the drum instantly to any note

within its compass, by remembering the number that corresponds to each note, and pointing the indicator to it on the face of the dial. Of course the cords may stretch in time, flattening the pitch and causing the representative numbers to change; temperature has a similar effect upon the pitch; should a performer, therefore find at a concert

The Ordinary Kettledrum.

for instance, that the heated atmosphere has put his drum out of tune, he need only turn the handle one or more notches to the right to bring his instrument back to pitch.

Each drumhead is capable of giving a compass of about half an octave; it will, therefore, be seen that each note has more than one notch at its service. Should the indicator point to No. 28, and yet by reason of the stretching of the cords the instrument be not sharp enough, another turn or two to the right, beginning again at No. 1, can be

given, which will have the desired effect. To slacken the head, the handle must be turned to the left and the little catch lifted.

As this drum can be tuned in a moment by means of the dial to a certain note, there is no occasion to keep the head taut when the instrument is not in use.

Quality of Tone. The little interior mechanism, which is of an elastic nature, has no detrimental effect on the tone, but on the contrary tends to increase its volume and improve its quality.

CHAPTER XXXI.

Orchestral Bells.

Glockenspiel, Harmonica, Pavillon Chinois, Xylophone, Parsifal Bell Instrument.

Italian, Campanelli. *French*, Carillon.

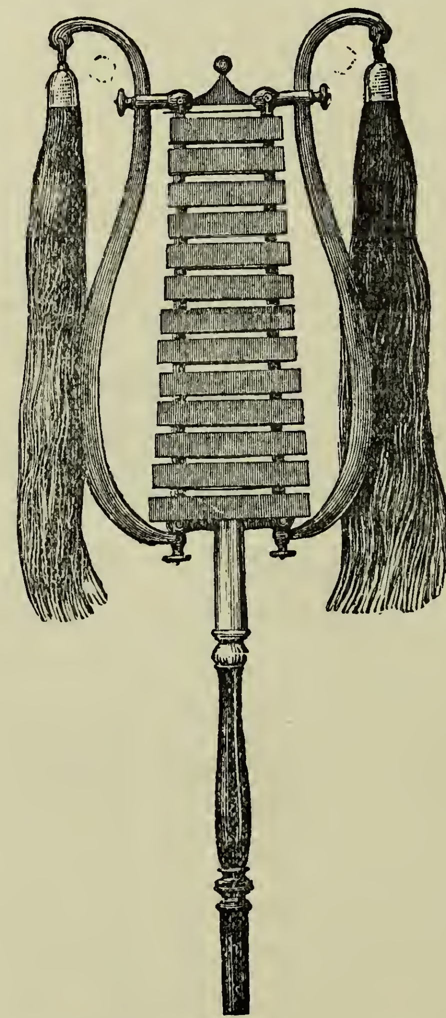
The bells belong to the class of instruments of percussion with a definite sonorousness, and are of various forms and kinds, according to the use to which they are put. Bells are scored for either to mark the rhythm and add brightness and piquancy to music, or for the purpose of imitating church or other bells; it is with the former that we are chiefly concerned here, and for them the word bell is generally a misnomer, other shapes of metal or wood having been found more convenient. The term Glockenspiel is understood to mean a set or frame of bells that can be easily played by one performer by means of steel hammers.

Construction. The *pyramid-shaped* glockenspiel or pavillon chinois, consists of an octave of semi-tone hemispherical bells, placed one above the other, and fastened to an iron

rod which passes through the centre of each; they gradually become smaller as the pitch rises, which gives the instrument the shape of an elongated pyramid.

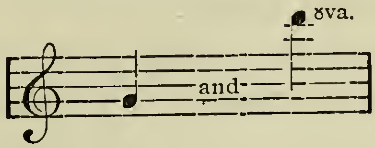
The *lyre-shaped* glockenspiel, carillon or harmonica, a newer model which has now replaced the pyramid shaped (see diagram), has instead of bells 12 or more bars of

The Glockenspiel.



steel graduating in size according to their pitch; these are fastened to bars of steel which follow the same direction as the strings in a lyre, and are set perpendicularly in a steel frame in the shape of a lyre, this harmonica is played by means of little steel hammers attached to whalebone sticks.

Compass. The compass of this instrument lies between

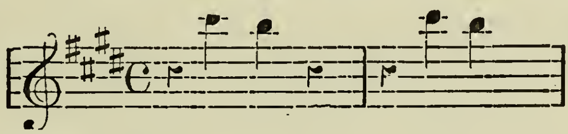


(real sounds), or even higher.

Quality of Tone. Wagner has exercised exquisite judgment in the use of this instrument, notably in the Fire Scene of the "Walküre" (last act), and in the Peasants' waltz in the last scene of "Die Meistersinger."

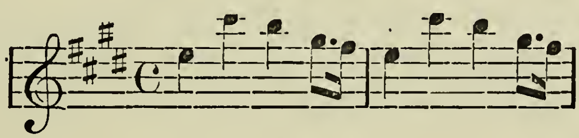
Feuer Zauber. Die Walküre. Act III.

Glockenspiel.



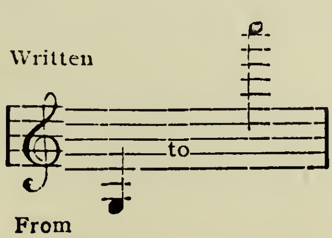
Sounded an octave higher.

Flute and Clarinet.



The quality of tone given by these instruments is penetrating, clear and sparkling.

The Xylophone is made of little wooden staves each like a half cylinder resting on two wooden bars covered with straw, and arranged in such a manner that each half cylinder or semitone is isolated. The Xylophone is played with two little wooden hammers, and has a compass of nearly, or quite 3 octaves, according to the makers. *(For Illustration see p.* 183*)*.

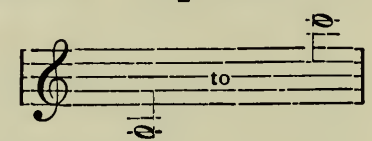


(Sounded an octave higher.)

The quality of tone is inferior to that of the preceding instruments and is not so clear.

The Keyed Harmonica. This is a fourth form of this little instrument and consists of a keyboard, to each note of which a little hammer is attached, which strikes a bar of glass when the key is depressed.

This harmonica has a compass of over two octaves, from



(Sounded an octave higher.)

It is used of necessity when chords are written for the Glockenspiel, as in Mozart's "Magic Flute," otherwise more than one player would be required, but chords do not often sound well on the bells owing to the inequalities of tone in the different notes; it is possible to produce various effects, scale and arpeggio passages, in single or double notes on the keyed harmonica.

Mozart, Handel, Gluck, Meyerbeer, Berlioz, Wagner and St. Saëns, have scored for these instruments.

CHAPTER XXXII.

The Bells.
Gongs, Tubes, Dr. Mottl's Bell Instrument.

In some dramatic works, composers have wished to imitate the sound of church bells, as for instance in Sir Arthur Sullivan's "Golden Legend," Verdi's "Trovatore," Mascagni's "Cavalleria Rusticana," Leoncavallo's "Pagliacci," Wagner's "Rienzi" and "Parsifal"; it is evident that in these cases, larger bells, of a deeper sound than the foregoing are necessary, this is somewhat difficult to attain satisfactorily for the following reasons: large bells of a very low pitch are too cumbersome and heavy for the orchestra, the notes are often impure and obscured by the dissonant harmonics; and bells large enough to give the notes required for "Parsifal" would overpower the

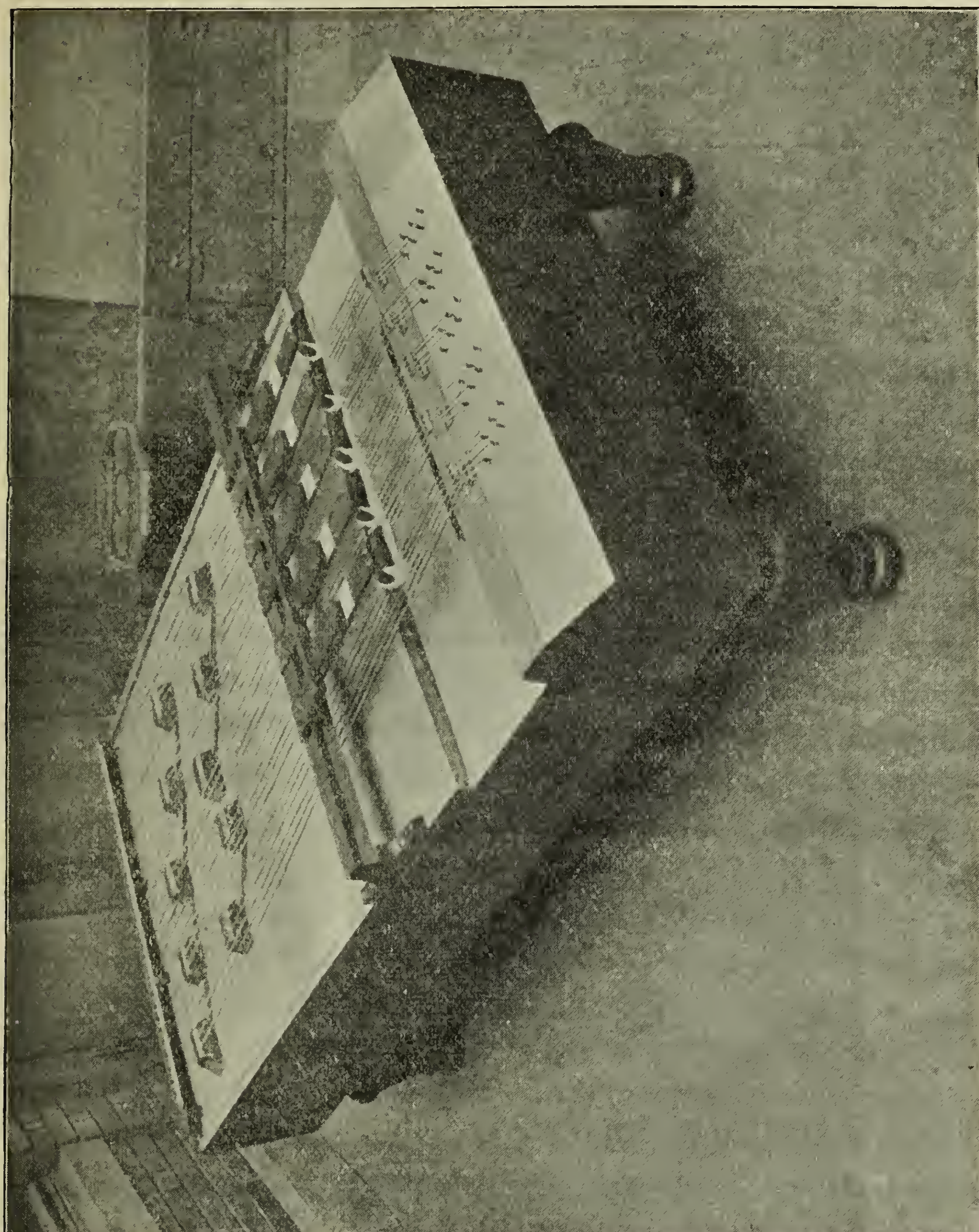
orchestra with their volume of sound. Various substitutes have been tried, but of course, no other instrument gives

a tone in the least similar to that of the bell, which independently of the harmonics has two distinct simultaneous notes: first, the *tap* tone which gives the pitch and is dependent on the manner in which the bulk of the metal is disposed in casting the bell, as well as on the quality and proportions of copper and tin used; *secondly*, the *hum* tone or lower accompanying note, whose interval from the "tap" tone varies in different bells according to pitch and the taste of the maker, but on which the purity of the tone of the bell greatly depends; a flattened major seventh below the tap tone is generally found to give the best results in a deep bass bell. The hum tone is governed by the relative proportions of the shape given to the bell.

In a letter written on the subject of the bells at Madame Wagner's request, Herr Julius Kniese, of Bayreuth, tells me that in order to obtain the effect of deep church bells as scored by Wagner in "Parsifal," the following combination is now used: (1) A large stringed instrument with 4 keys, similar to that designed by Dr. Mottl (see accompanying illustration). (2) 4 tomtoms or gongs tuned to the pitch of the 4 notes. (3) A bass-tuba which plays the notes staccato in quavers, to help to make them more distinct; and (4) A fifth tomtom on which a roll is executed with a drumstick. The steel tubes were tried, but as their pitch was two octaves too high, they sounded tinkly, and introduced an element foreign to the noble music of the Grail, they were therefore abandoned.

Construction and Production of Sound. The Parsifal Bell instrument has been constructed somewhat on the principle of the grand piano; the massive frame is shaped like a long dining table, and rests on four solid feet; the soundboard is of spruce fir strengthened on the underneath by belly bars. There are thirty strings in all, mostly covered with

copper wire; six to each note of which three are in unison and give the fundamental note, and three the octave higher.



*"Parsifal" Bell Instrument.**

* The illustration of this bell-instrument is a reproduction of a photograph presented by Herr Ludwig Schweisgut, of Carlsruhe, who made the instrument according to Dr. Mottl's design for Mr. Schulz-Curtius, to use at his Wagner Concerts.

The mechanism is simplicity itself, there is no action; the strings are struck by large wooden hammers, thickly and loosely covered with cotton wool, which the performer sets in motion by a strong but elastic blow from his fist. The hammers are fastened to arms about twenty-two inches long, fixed by screws to a strong wooden span bridge, placed horizontally above the strings at about two-fifths of the length from the front; on the front of the arm is the name of the note, and farther back the green felt ledge struck by the fist. To control the rebound of the hammers, a strong wooden bar on two arms, fastened also to the span bridge, overhangs the notes. Two belly bridges and two wrest plank bridges, one set for each octave, determine the length of the strings, and the belly bridge, as in other stringed instruments, is the medium through which the vibrations of the strings are communicated to the soundboard. The strings are fastened to thirty equidistant pegs at the further end of the instrument, and to five groups of wrest pins firmly set in an iron wrest plank in the front of the instrument; the back of the instrument is strengthened by an iron plate and four iron pillars to resist the tension of the strings.

Compass. The bell-instrument has five notes; the D

which is not required for "Parsifal," is used in the "Cavalleria Rusticana" in conjunction with the A.

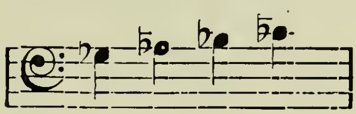
Quality of Tone. The quality of tone is rich, powerful and noble, and carries well; it is clearly the best substitute known for church bells in the orchestra, since it preserves the dignity of the atmosphere, which is destroyed by the triviality of all glockenspiels and tubes.

Peal of Hemispherical Bells

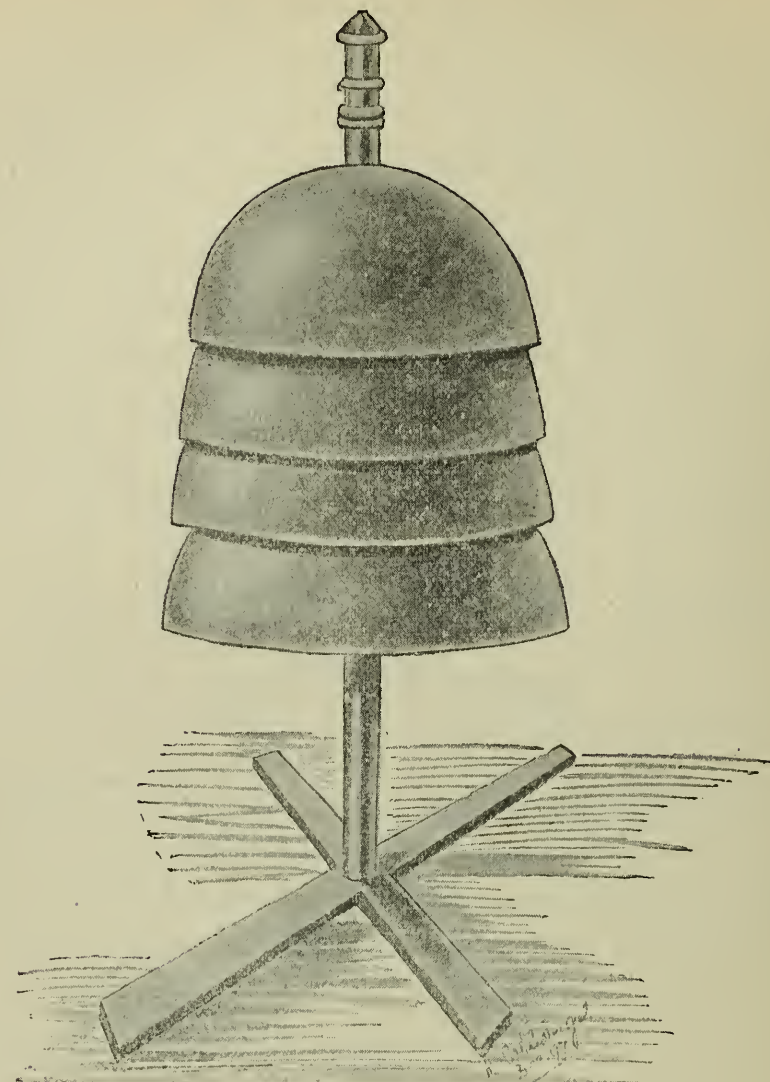
(Specially constructed for Sir Arthur Sullivan's "Golden Legend.")

The peal of hemispherical bells, shown in the illustration, is constructed of bell metal about an inch thick. The largest bell measures over 27 inches in diameter and the smallest 23 inches. They are fixed on a stand one above the other, leaving only about three quarters of an inch clear space between each; the rim of the lowest bell is 15 inches from the foot of the stand. They are struck by mallets, of which there are two sets, one of plain wood for *forte* passages, and one covered with wash-leather for *piano* effects.

Pitch and Tone. The pitch of the bells is:



with a hum tone an octave lower, as far as could be determined without mounting them. This is no easy matter, since they have an aggregate weight of 11 cwt. The tone of these bells is full and mellow, and very rich in harmonics. When these bells are not obtainable, a set of steel tubes is substituted, which, of course, does not produce the same effect as the bells; and the pitch is higher. I am told that this peal of bells is unique (or was when made for the "Golden Legend,") but I was shown a single bell of similar construction (also in the possession of Messrs. Novello & Co.) whose diameter measured about two-thirds of that in the smallest of the peal; it is made of metal about a quarter of an inch thick, and gives a deeper tone than the largest bell of the peal. This small bell tuned to E, was specially made for the performance of Liszt's "St. Elizabeth," conducted by the composer in London.



Peal of Hemispherical Bells.

Instruments of Indefinite Musical Pitch.

The Bass or Big Drum.

French, Grosse Caisse. *German,* Grosse Trommel.
Italian, Gran Cassa or Tambura.

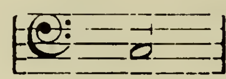
Construction. The bass drum consists of a short wooden cylinder of a very wide diameter covered at both ends by vellum stretched over small hoops, kept in place by larger hoops. The two large hoops are connected by a cord

passing in zig-zags from hoop to hoop. These cords, and with them the large hoops, and therefore, the vellum, are tightened and slackened by means of leather braces. Systems of rods and screws are also used for the purpose. In the orchestra the bass drum is mounted on a stand.

The Bass or Big Drum.

Production of Sound. The bass drum is struck in the centre with a stick, ending in a large, soft round knob. This instrument does not need tuning, but the pitch may be made acuter or deeper, according to whether a rich, full tone, or a mere dull thud is required, by respectively tightening or loosening the braces; the instrument can also be muffled by covering it with a piece of cloth.

Notation and Possibilities. The music is written generally



on a stave with the bass clef, the C being used to show the rhythm and accents. Sometimes, however, no stave is used, a single note on a single line being found sufficient. The bass drum has a place in every orchestra, but the more sparingly it is used the better; its use is to accentuate the rhythm. It is possible to make gradations in *forte* and *piano*, and to play quavers and semi-quavers when the tempo is not too quick. A roll can be played by holding a short stick, furnished with a knob at each end, in the middle, and striking alternately with each end, or better still, by using two kettle-drum sticks. The cymbals play the same music as the bass drum, unless "Senza piatti" (without cymbals) be written over the part. It is significant that Wagner has not once scored for the bass drum since he composed "Rienzi"; but other composers, Verdi, Gounod, Berlioz and Sullivan have used it very effectively.

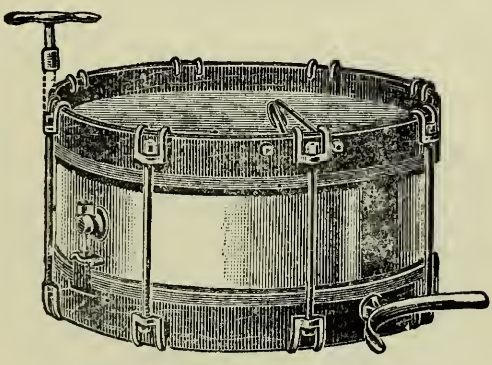
Origin. The popularity of all kinds of drums in the most ancient civilizations, is established beyond doubt by the numerous representations of the instrument in great varieties of size and shape, on sculptures and paintings of Egypt, Assyria and India. The tympanum, a very shallow side or bass drum, was known to both Greeks and Romans, and through them its use spread all over Europe. The tympanum was certainly known in England long before the Crusades, for Bede mentions it in his list of instruments. Its use for military purposes in England possibly dates from the reign of Richard I., who had become accustomed to drums at the Crusades. The drums were slung to the back of a man who walked in front of the drummer. Side drums were of a much larger size than they are now,

till the reign of Elizabeth, and were held horizontally, and beaten, of course, on one head only. How early the use of snares was known is uncertain, but Prætorius and Mersenne both mention them (early 17th century). Marais (1636 to 1728), was, as far as we know, the first to score for the side-drum, in his opera "Alcione"—Gluck used it in "Iphigenia in Tauris," and since, other composers have occasionally followed this example.*

The Side or Snare Drum.

French, Tambour Militaire. *German*, Militär Trommel.
Italian, Tamburo Militare.

Construction. The side drum consists of a small wooden or brass cylinder with a vellum at each end. The parchments are lapped over small hoops, and pressed firmly



Potter's Orchestral Side Drum.

down by larger hoops. These and the vellums are tightened, as in the bass drum, either by cords and leather braces, or by rods and screws. Across the lower head are stretched several cat-gut strings, called snares, which produce a rattling sound at each stroke on the upper head, owing to the sympathetic vibration of the lower head which jars against the snares.

---

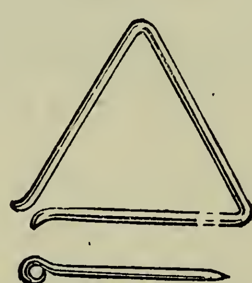
* See "Catalogue of Musical Instruments," Captain Day.

Production of Sound. The drum is struck in the centre by two small sticks with elongated heads, or knobs of hard wood, which produces a rasping sound. The roll is produced by striking two blows alternately with each hand quite regularly, and very rapidly, which gives a rattling tremolo sound. The side drum can be muffled by loosening the cords, or by inserting a piece of cloth or a silk handkerchief between the snares and the parchment; this produces an uncanny sound. The *tenor* drum (Caisse roulante, Rühr Trommel), is very similar to the side drum, but is made only of wood, and has no snares. The side drum is used in orchestra to give a military colour to the music. The origin of the instrument has been given with that of the bass drum.

The Triangle.

German, Triangel. *French*, Triangle.
Italian, Triangolo.

The triangle, as its name denotes, is a triangular rod of steel, open and curved slightly at one corner. The triangle is played by means of a steel stick with a wooden handle.



Triangle and Beater.

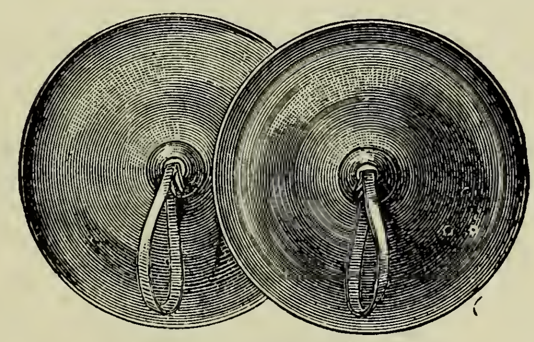
Varied effects of rhythm and different grades of *forte* and *piano* can be obtained. A sort of *tremolo* can be produced by striking each end of the triangle alternately in rapid succession. The treble clef is used when the triangle is scored for on a separate staff, but when its music is the

same as for the big drum, the bass clef is used. The tone is clear and ringing, but should have no definite pitch, for that reason small triangles are best, for large ones give out a definite and disagreeable note. The triangle is suspended by a loop. This instrument is used to mark the rhythm, but even more as an embellishment. Beethoven, Mozart, Weber and most other classical as well as modern composers, have made use of this little instrument in some of their works.

Cymbals.

German, Becken. *Italian,* Piatti or Cinelli.
French, Cymbales.

Construction. Cymbals consist of two thin round plates of copper and tin alloy, with a handle strap in the middle of each for holding them. The sound is obtained not by clashing them together, but by rubbing their edges together



Cymbals.

by a sliding movement. Sometimes one is held in the left hand by a strap and struck with the soft stick of the bass drum, which produces a sound akin to that of the tom-tom. A weird, savage effect, can also be produced by holding one cymbal suspended by the strap, and letting the drummer execute a roll on it as it swings.

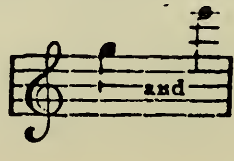
Possibilities. All shades of *forte* and *piano* can be obtained, and when the cymbals are to be allowed to vibrate,

the composer indicates this by "Let them vibrate"; and by "Damp the sound," if the contrary effect is desired; to do this, the player presses the cymbals against his chest as soon as he has played the note, which stops the vibrations. The duration of the vibration is indicated by the *value* of the note used on the staves, its *name* signifies nothing, as the pitch of the cymbals is indefinite. This instrument plays the same music as the bass drum, unless otherwise indicated by "Senza piatti," or "Piatti soli." Cymbals are to be found in all orchestras, though they are but occasionally required; they are useful for marking the rhythm, and for producing weird, fantastic or military colour; their shrill, quivering notes are heard above those of all the other instruments playing *fortissimo*. Cymbals are unrivalled for giving the effect of frenzy, fury or of a bacchanalian revel, as in the "Tannhäuser" Venus Music or Grieg's "Peer Gynt"; when damped, a sinister impression of dire misfortune is conveyed.

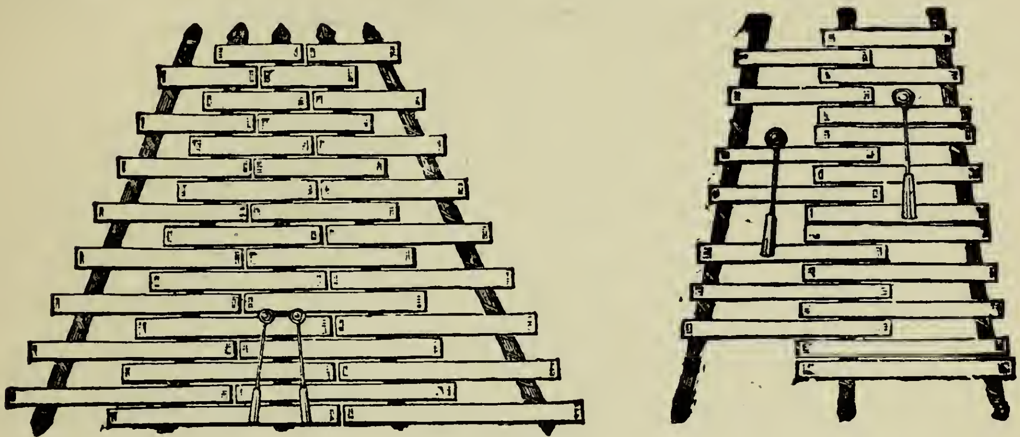
Origin. The origin of the cymbals is prehistoric, and they are found depicted on mural paintings and sculptures of the highest antiquity; their construction is so simple, and their possibilities so limited, that they have undergone little change or development.

The Ancient Cymbals.

This instrument belongs to the class of instruments of percussion with a definite musical pitch. The ancient cymbals are very small, resembling shallow bells; they are made of much thicker metal than the modern cymbals, and give out a distinct note tuned to one of the notes lying between



They are played in the same manner as the modern; their sound is sweet but powerful, like that of the keyed harmonica. They are rarely used in the orchestra now.



The Xylophone

The Pavillon Chinois or Chapeau Chinois. Turkish Crescent or Jingling Johnny.

German, Schellenbaum or Türkischer Halbmond.

The Pavillon Chinois, an instrument of percussion incapable of producing definite musical tones, was formerly used in military bands, but never in the orchestra, where an instrument of somewhat similar form, the *lyre-shaped Glockenspiel*, often confused with the Pavillon Chinois, is used to mark the rhythm (see p. 168). The Pavillon Chinois consists of a pole about six feet high, surmounted by a crescent and star and conical metal cap or pavillon hung with small bells. Under the pavillon is a squat lyre or fanciful double crescent likewise hung with tiny bells and long streamers of horse hair. The Pavillon Chinois is played by shaking the pole up and down and jingling the bells.

APPENDIX.

The Virgil Clavier.

AS the Virgil Clavier is a clever invention, which is every day making further way with the students of the pianoforte, and with members of the profession generally, a few words concerning its construction and use, may not be amiss in this work.

Construction. The Virgil Clavier is an instrument containing a fac-simile of the keyboard of the piano, but possessing instead of the action and strings of the latter, an ingenious but simple mechanism for producing tell-tale clicks, which test the regularity and accuracy of the finger movements of the player, and another mechanism for varying the weight of the touch.

The keys are constructed like those of a piano, and are poised on a series of fulcrum pins fixed in the balance rail which extends transversely under all the keys; in front, also under the keys, the guide pins are set in the centre of thick felt cushions. Each key is provided with a small screw ending in a metallic spur which projects downward, placed under the forward end of the key, and with another

under the rear end. Exactly under these spurs, but not touching them, there extend horizontally two stout wooden bars, one for each set of spurs, into each of which a brass plate is packed tightly with felt to prevent jarring. These bars move up and down at the will of the performer, bringing the metal plate within the range of the spur, so that when the key is fully depressed or released, the spur striking the brass plate, proclaims the fact to the student by producing sharp clicks, which correspond exactly in the travel of a key of the piano with the points at which the musical tone commences and ceases. These two clicks, the *up* and *down*, can be thrown into operation singly or together by means of a knob situated at the left of the keyboard for the up-clicks, and to the right for the down-clicks.

The key resistance is determined by a mechanism situated at the back of the key-board, consisting of weights and springs. Over the rear end of each key is suspended vertically a movable weight, which is struck by the key as it rises at the back in answer to a depression by the finger; the weight is thrown upwards by its own momentum above the key, so as to drop back upon it, and to cause a back stroke. This upward rising of the rear end of the key, as each note is played, is resisted by its coil spring with an upward projecting arm, this arm presses against a heavy bar placed transversely across the keys, regulated by means of a tension handle in the front of the desk which works a screw shaft adjusting the bar; the harder this bar presses against the spring arms, the greater the force required to depress the keys and tilt up their rear end. The amount of this tension in ounces, from one to twenty, is registered by an index finger, on a scale placed on the name-board.

The instrument works in the following manner: the finger depresses a key which presses on the cushions

situated under it, then (supposing the clicks are in operation) the sharp down-click is immediately heard, provided the cushions be fully compressed. When the key is released, the resilience of the cushion raises the key to its normal position, and the momentum thus acquired causes the rear end of the key to compress its cushion, so as to permit the second spur to strike the plate, producing the up-click which corresponds to the time in the travel of a note of the piano, when the damper has rested on the strings long enough to stop their vibrations completely—that is to say when the key has regained its normal position.

The use of the Virgil Clavier for practice is thus exceedingly valuable for acquiring touch and technique.

A perfect legato can be tested, when both clicks are on, by hearing but one; the up-clicks of the one note coinciding exactly with the down-click of the next.

The distinctive object of the Virgil Clavier is to separate effectually the tonal from the mechanical in learning to play the piano, to give the intellect full play in acquiring new pieces, undisturbed by musical sounds, so that once the construction and mechanical difficulties of a piece of music have been mastered on the clavier, the performer comes fresh to the piano, with a perfect command of every variety of touch, and the notes photographed on the brain, and lodged in the fingers; he can then give himself up to the interpretation of the essence of the music absolutely undisturbed by mechanical considerations.

The student learning a new piece on the piano is more or less like a child spelling out laboriously, letter by letter, the words of a fine poem; so taken up with mastering the words and their sounds that the music and meaning of the poem pass unnoticed.

Side by side with the instruction on the Clavier, the ear

of the student is cultivated, so that he may supply the musical sounds that correspond to the notes he learns to play on the clavier, without playing them over first on the piano.

Touch and finger action are often bad on the piano, not from weakness, but because, although the downward movement of the finger in striking a note is always immediately and audibly recorded in tone, the upward movement of the finger in releasing the key too often is practically unheeded; it merely means cessation of sound. This slovenly habit of neglecting to raise the fingers with a purpose at the right moment, can be checked by applying the up-click to the clavier.

The Virgil Clavier, finally, is the result of many years of close study spent by Mr. Almon Kincaid Virgil in endeavouring to discover the true principles of artistic skill in pianoforte playing, and was patented in England on September 3, 1892.

The Clarina.

The Clarina is a comparatively new solo instrument, invented by Herr W. Heckel, of Biebrich am Rhein, which was adopted at the Festspielhaus, Bayreuth, and in many of the large Opera *Kapelles* in Europe, in 1891, for use in "Tristan and Isolde," in preference to the Holztrompete made according to Wagner's instructions (see Cor Anglais, Chapter V.)

The Clarina is a metal instrument with the conical bore and fingering of the oboe, and the clarinet single-reed mouthpiece. The compass of the instrument is from

The Clarina is tuned to B flat, and like the Clarinet is

a transposing instrument, for which the music must be written in a key a tone higher than that of the composi-

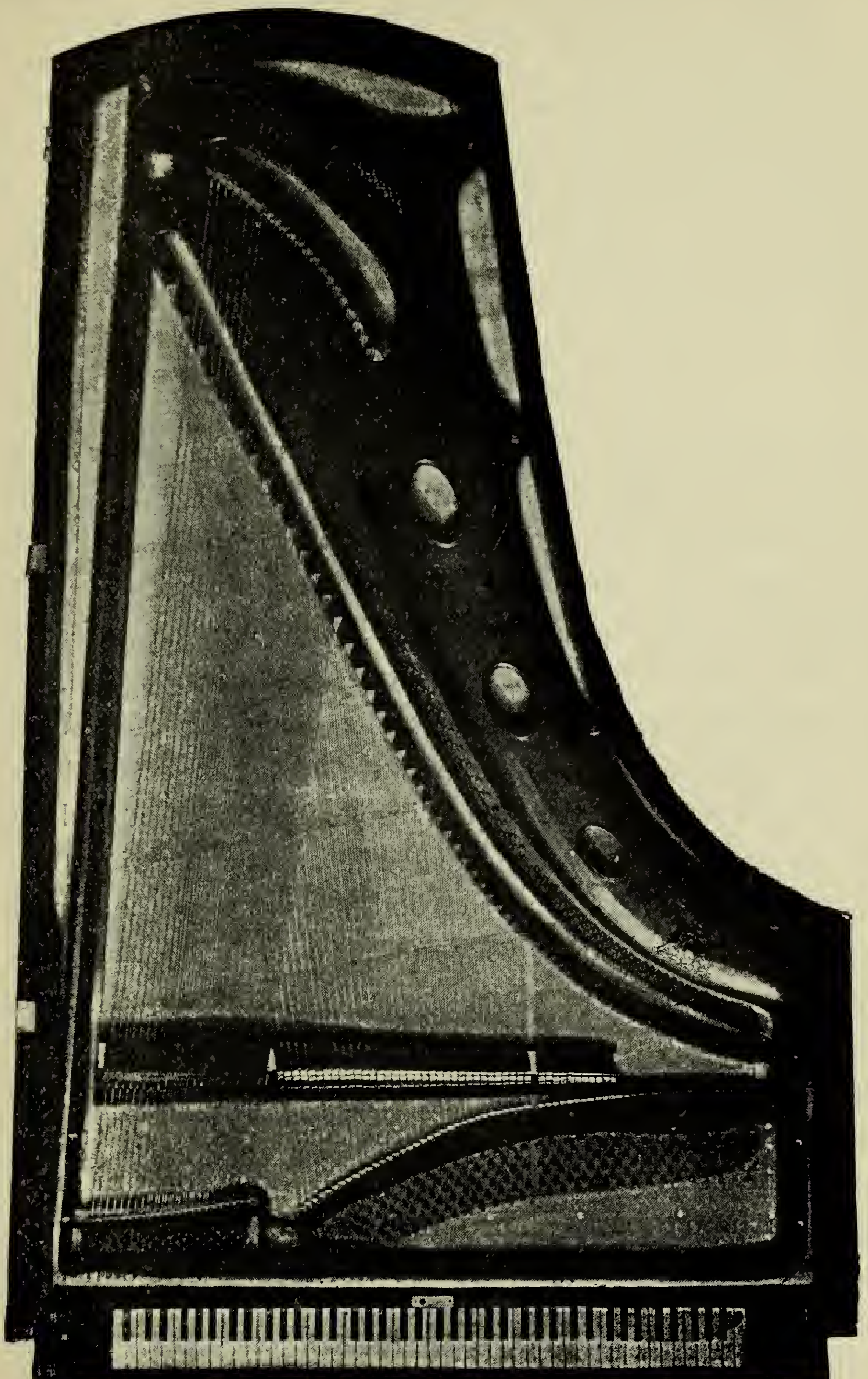
tion. From the combination of conical bore with a single reed mouthpiece, results a timbre which has affinities in the lowest register with the cor anglais, in the middle with the Saxophone, and in the highest with the Clarinet.

A Barless Steel Frame Concert Grand.

An important and radical departure has been made in the construction of the piano by Messrs. John Broadwood and Sons, which must prove of paramount interest alike to musician and manufacturer. The new instrument was first heard in the concert hall in January, 1898, at St. James's Hall, and the artistic result, which naturally commends itself first of all to the musician, was such as to prove beyond a doubt the substantial value of the improvement patented just ten years before by the firm. The working out of this idea no doubt presented many difficulties, and the years that have elapsed since the patent was taken out (January 26th, 1888), have been well employed in embodying the improvement and thoroughly testing it from every point of view before submitting the result to the musical world. The tone of the new barless steel frame concert grand is of singular beauty and sonority, and the tone is homogeneous throughout the registers. The change of construction which the title implies is one of great simplicity, which brings back to our mind the old wooden pianos of the first decade. The metal frame is of fine cast steel, without any transverse bars, or struts, but having been instead turned up round the edges to form a flange which enables the frame to bear the increased modern tension.

It will be seen that this construction is ideal, and, as in most lasting and real improvements, the innovation shows a return to simplicity. The idea of an accession of rigidity and massiveness in the frame has been abandoned

in this new instrument, the motive thought being on the



A Barless Steel Frame Concert Grand, 1898.

contrary an increase of elasticity and equality of vibration power throughout the scaling; this was incompatible with

the system of barring, for at the points of abutment of the struts, the rigidity of the frame was considerably greater than elsewhere, producing a different tone quality. In conclusion, promptness of "speech" and flexibility are eminent qualities in this new instrument: the amount of tone may be reduced to the musical whisper of a clavichord, or be increased until almost the power of the orchestra is attained.

The Georgi Flute.

The invention of Signor Carlo Tommaso Georgi, made known to the musical world in 1896, places the technique of the instrument on an entirely new and simple basis, doing away at one blow with many difficulties hitherto considered insuperable. The radical changes effected by this invention, which rests on the laws of acoustics, are in the embouchure, the position and diameter of the holes, and the abolition of all keys.

Construction. The Georgi Flute consists of a cylindrical tube of ebonite open at one end, and consisting of two joints only; the head and the body. As in the concert flute, the head joint (here a very short one) contains the embouchure, which, however, is placed at the upper extremity of the tube, and not at the side. Instead of having a tuning cork, the Georgi flute is stopped or closed by means of a mouthpiece of the same material as the tube, and shaped like a lip. There are eleven holes of uniform diameter, mathematically placed in the tube, so as to give the semi-tones of the scale; there are no keys. The construction as will be seen is very simple and rational, and there is nothing to get out of repair.

Production of Sound. The sound is produced in the ordinary concert flute, by the performer resting the instrument

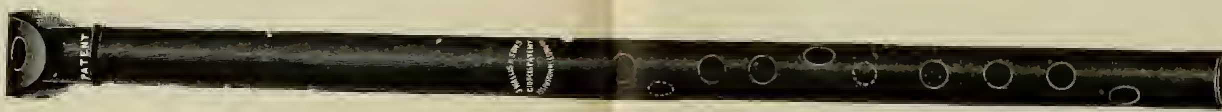
against his lip, and directing a thin stream of air against the sharp edge of the embouchure; this stream is thus driven against the tuning cork, and repelled from thence along the tube; this re-percussion prevents the placing of the holes in their normal acoustic position, thus necessitating cross-fingering, and the use of keys. In the Georgi flute when the player, holding the instrument in a perpendicular position, blows into the mouthpiece, the breath breaks the column of air directly, without re-percussion, and therefore produces sounds in accordance with the length of a column of air, as afforded by the holes in the tube. There is one hole for each finger and thumb, and one additional hole closed by the side of the left forefinger; each finger being lifted, produces a note a semitone higher than the last—given an even pressure of breath—so that there are twelve positions, each corresponding to one of the semitones of the scale. To obtain the second octave, the pressure of breath is proportionately increased, the simple position of the fingers remaining the same; for the third octave, the notes from D to G sharp are obtained by increased pressure of the breath and positions on the minor twelfth; special fingering is only required for notes above G sharp. Thus the contrary movements of the fingers for raising some keys and pressing others are avoided. For the convenience of performers with short fingers, keys can be added, and the head of the Georgi flute can be used with any cylinder bore flute. The direct mouthpiece, which considerably facilitates the emission of a pure round tone, also makes the playing of the instrument easy, sure and healthy, doing away with the wry-necked position, which besides being uncomfortable is also ungraceful. The Georgi mouthpiece also makes it possible for the flute player to have his music in front of him, and to focus his eyes in a natural manner.

Compass. The compass of the keyless Georgi Flute is nearly the same as that of the Concert Flute, from

if the lower C and C sharp be required, extra holes and keys can be added.

Quality of Tone. The tone of the instrument is a true flute tone of excellent and uniform quality, and is brilliant and sympathetic besides.

Possibilities. Everything that is possible on the Boehm flute is possible on the Georgi, and more, on account of



The Georgi Flute.

the simplicity of the fingering, (each finger having but one duty to perform) and of the semitonal system. All trills are equally easy on this flute and the difficulties of the tremolo are now greatly lessened. The chromatic scale can be played rapidly with the utmost facility.

The Stelzner Violin Family.

What is it that Dr. Stelzner has accomplished with his new family of instruments? Where was the need of their being called to existence at all?

These are questions that one must expect will be put by people unacquainted with the instruments, and it will therefore be as well to endeavour to answer them.

The celebrated old Italian instruments, the Strads, Amatis, and Guarneri, are growing old; the wood has attained its highest point of perfection, and as it is unfortunately perishable, the *chefs-d'œuvre* of the old Cremona and Brescia masters must one day decline and perish; there is therefore, every need to have good violins ready to replace them.

The general outline and proportions of the Italian violin have been empirically determined, and no rules or laws of acoustics have yet been discovered that account for their beauty of tone, nor that would enable any maker to obtain the same results from those models. Dr. Stelzner asserts that the old Italian violins excell all others in beauty of tone, *in spite* of a construction which runs counter to the laws of acoustics, because age and use have mellowed the wood, and because their form is the nearest to perfection yet attained. By serious study and experiments in the domain of sound, and more especially in connection with its production in the sound chests of stringed instruments, Dr. Stelzner has discovered that the quality of tone produced depends upon the energy of the soundwaves generated within the body of the instrument by the molecular vibrations of the air; also that quality is influenced by the coincidence of the foci of these waves.

The present semi-circular outline of the shoulder and tail-end of the violin are therefore distinctly unfavourable to an increase in the quantity or the quality of tone.

Dr. Stelzner has abandoned them in favour of the ellipse and the parabola, and by accurately following out the measurements determined by these natural laws, an instrument can be produced from a diagram, which, fresh from the

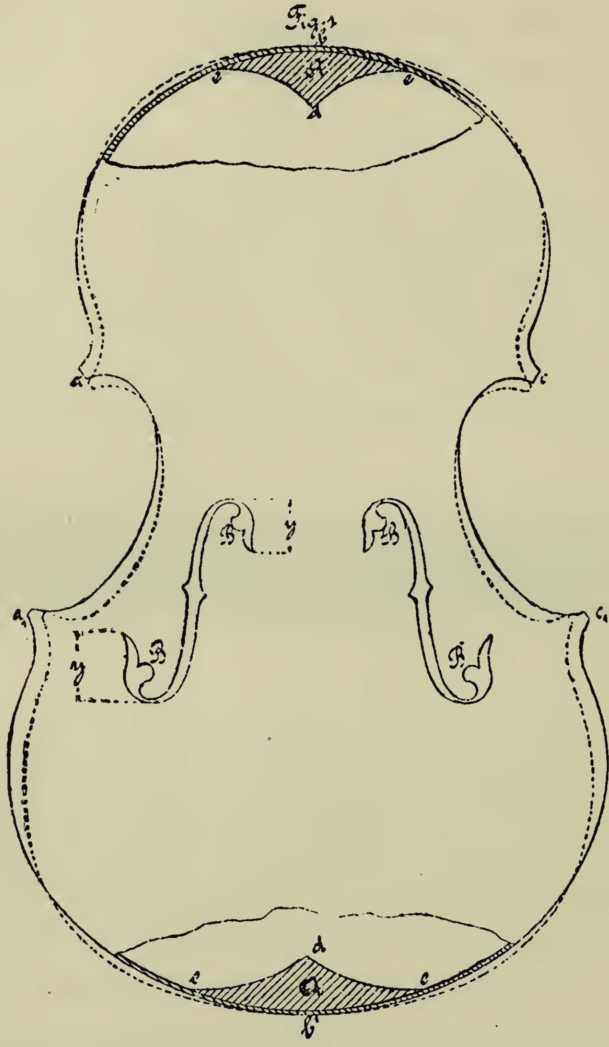


Fig. 1.—Outline of the Cremona and Stelzner Violins. Showing the top block and Soundholes (Stelzner.)

hands of the maker, will immediately speak readily in tones of great beauty. A great increase in the volume of tone, compared with that of the best old Italian masterpieces, is also undeniable. Dr. Joachim on testing the instruments, twice consecutively mistook a Stelzner for his own Strad.

Construction. The main points of difference in the construction of the Stelzner instruments are the four following:

(1). The elliptical curves of the body.

(2). The shape of the end blocks connecting the belly and back.

(3). The parabolic shape of the ribs.

(4). The form of the soundholes.

(1). The ellipses of the Stelzner violin are to be seen in Fig. 1, at A, B, C, compared with the semicircular curve of the Italian instrument which is denoted by the dotted line. The upper and lower ellipses, respectively, E, D, E3, and P, D1, P3, bear fixed and immutable relative proportions, and the power of the tone is increased by the reflection of the sound-waves from ellipse to ellipse, and from parabola to parabola.

(2). On examining the end blocks in Fig. 2, which represents the interior of the belly of the Stelzner violin each will be found to form two parabolic curves, G, S, whose foci and axes are so related to those of the ellipses as to strengthen the energy of the soundwaves. These foci and axes are indicated in Fig. 2.

(3). The ribs of Italian violins (see Fig. 3, F, G, and H, I) are either of absolutely equal width, or at best slightly higher at the lower end, whereas in the Stelzner instruments the edges of the ribs form parabolic curves (Fig. 3, K, L, M, and W, L, O), The most important point in this change of outline of the ribs, is the manner in which the soundboard is fitted on. Here the forces of nature are brought into requisition to further Dr. Stelzner's system; the greater the tension of the fibres of the wood, the greater the resonance; the back and belly are cut straight according to the general practice, and are *forced* on to the ribs during the process of glueing, whereby an artificial tension of the fibres of the wood is induced.

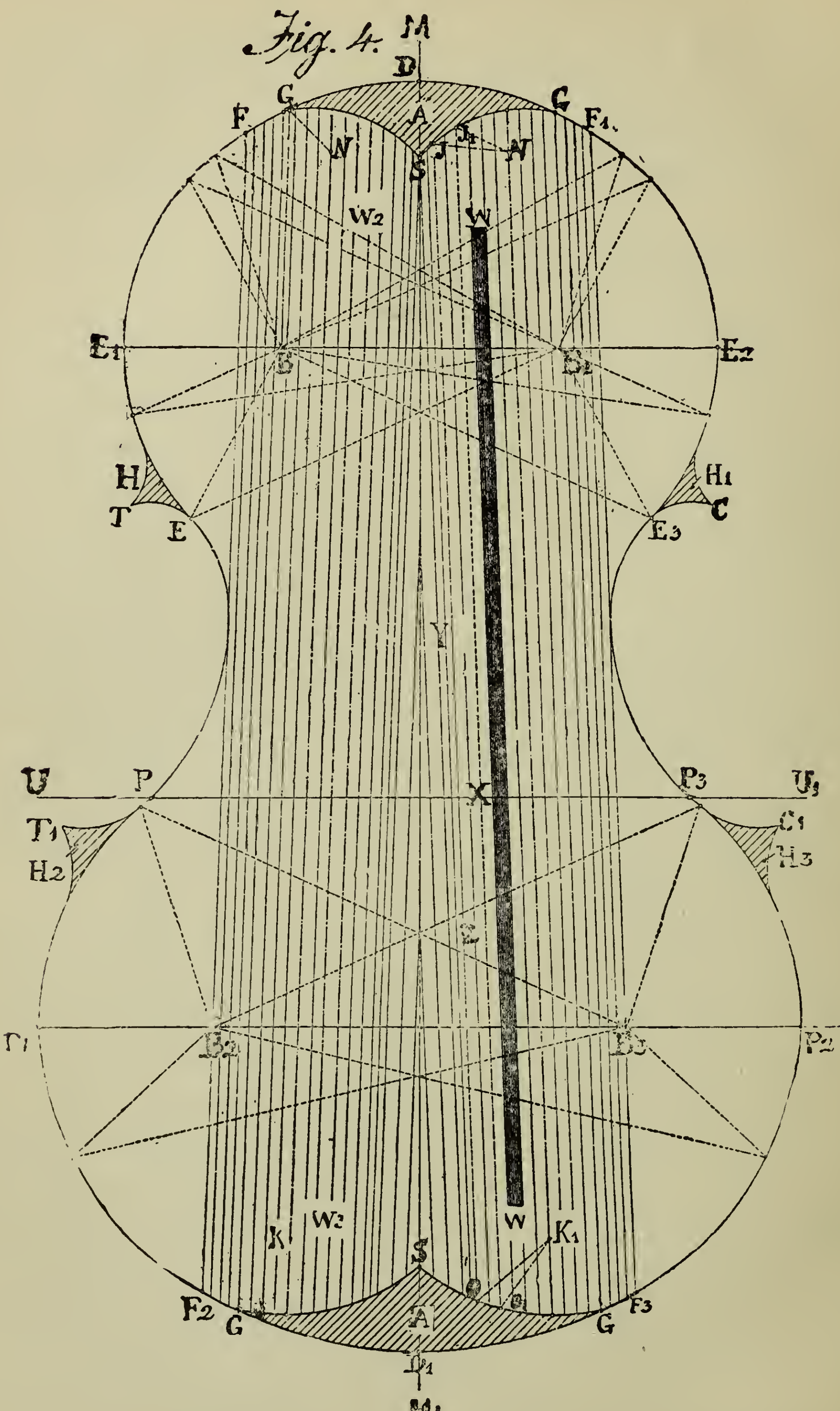


Fig. 2.—Showing the interior of the Stelzner Violin, and the foci of the Soundwaves.

(4). The shape of the sound-holes has, it is well-known, a great influence on the tone of the instrument, and Dr. Stelzner has discovered the reason; the piece of the sound-board which lies between the scroll termination of the soundhole and the stem of the F (see Fig. 1 and 2, B), is in reality a vibrating tongue, and the inventor in altering the shape of his sound holes by increasing the size of the vibrating tongues six fold, and by making them vibrate in the direction of the grain of the wood, has obtained another powerful factor in increasing the tone emitted through the soundholes.

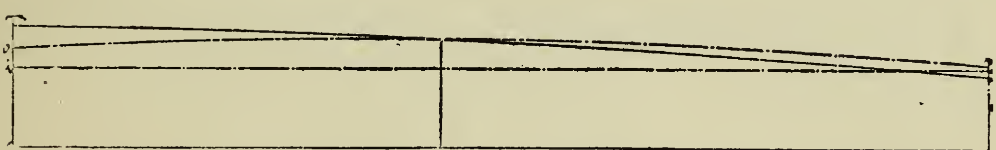


Fig. 3.—Diagrams showing the respective lines of the ribs in Stelzner and Italian Violins.

This construction holds good for the six instruments which compose Dr. Stelzner's set, and a standard model in strict proportion to the other instruments of the family has been fixed for each. The complete set, consists of violin, viola, violotta, 'cello, cellone, and double bass; the latter, however, is not used in chamber music.

It will be seen that the list contains two new instruments; the *violotta* or large viola, an octave below the violin, fills the gap between the viola and 'cello. The violotta is the same length as the viola, and the deeper pitch and richness of the tone are obtained by increasing the width of the ribs slightly. The violotta is a most captivating solo instrument, with a tender, warm and sympathetic tone of great power.

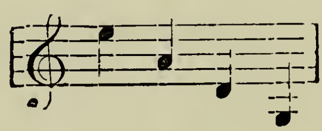
The *cellone* or large 'cello, is again an octave lower than the violotta, and therefore a fourth below the 'cello; its body is only one inch longer than that of the full-size 'cello. The cellone, whose pitch is as deep as that of the

three stringed double bass, was produced by the inventor to supply a suitable bass for chamber music with the same colour as the other instruments.

Production of Sound. The sound is produced in exactly the same manner on the Stelzner instruments as in the old instruments (see p. 103); the fingering and bowing are absolutely the same. With regard to the violotta and cellone, they are easily mastered by a performer on any other member of the family of strings.

Compass. The following table shows the compass of the instruments; the notation for the violotta and cellone are in the F or bass clef, and offer no difficulties.

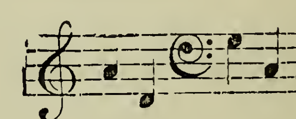
Violin.



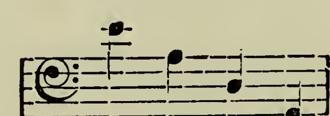
Notation.

Viola.

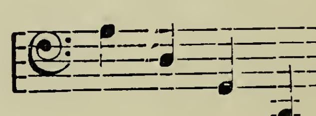
Real Sounds



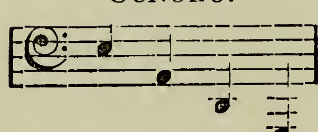
Violotta.



Violoncello.



Cellone.



Double Bass.

octave lower.

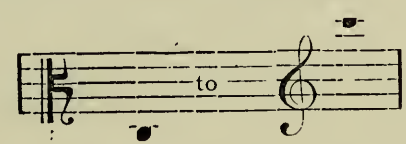
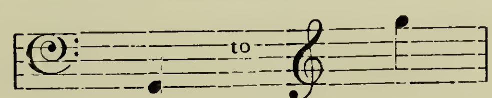
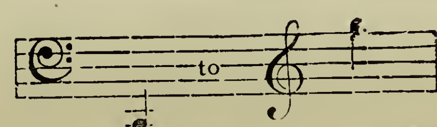
Quality of Tone. The quality of tone is uniform in character throughout the compass of the five instruments, so that when a chord is given out in parts by the set, it sounds like a chord on one instrument. The extraordinary

power and fulness of tone obtained from these instruments is startling, and they will of course, improve and mellow with age like other stringed instruments. The dreamy beauty of the violotta played *piano* is incredible; its warmth of tone at once won the sympathies of the public.

Possibilities. These have not yet been fully gauged, but their possibilities are far in advance of anything yet attained by any stringed instrument. As compositions for these instruments multiply, and the violotta is introduced into the orchestra, the increased capabilities which these instruments afford will not fail to receive a world-wide recognition. Max Schilling, the composer of "Ingwelde," has scored for the violotta in his later operas.

TABLE SHOWING THE COMPASS OF THE INSTRUMENTS OF THE ORCHESTRA.

STRINGED INSTRUMENTS.

Violin.		with chromatic intervals. still higher for solo playing.
Viola (Bratsche).		with chromatic intervals.
Violotta. (Dr. Stelzner).		with chromatic intervals.
Violoncello.		with chromatic intervals.

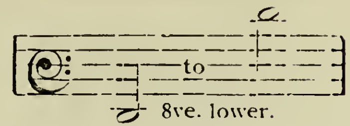
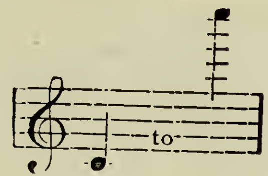
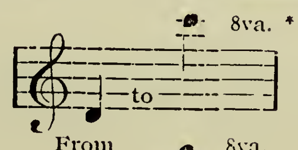
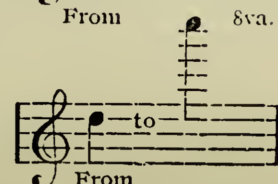
Cellone. (Dr. Stelzner).		with chromatic intervals.
Double Bass.		with chromatic intervals. the music is written an octave higher to avoid the ledger lines.
Harp.		with chromatic intervals.
Pianoforte.		with chromatic intervals.

TABLE SHOWING THE COMPASS OF THE INSTRUMENTS OF THE ORCHESTRA *(continued.)*

WOOD WIND INSTRUMENTS.

Concert Flute.		with chromatic intervals.
Georgi Flute without Keys.		The Georgi flute is also made with the extra notes D flat and C with two keys.
Piccolo.	Notation.  Real Sounds.  * This is the extreme compass, but the last 6 notes are very piercing and the last 3 barely possible.	with chromatic intervals. The music is written an octave lower to avoid the ledger lines.

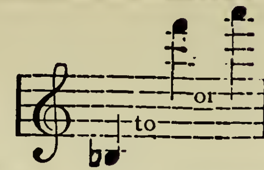
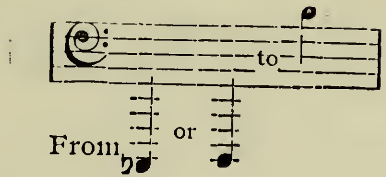
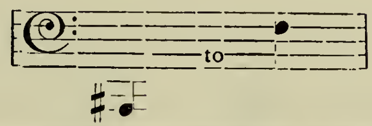
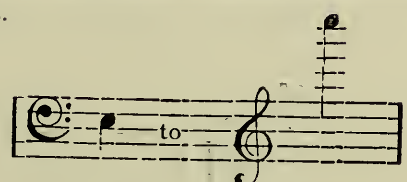
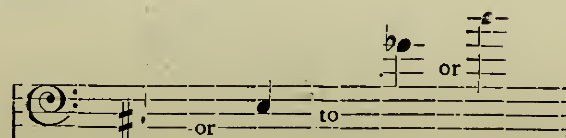
Oboe.		with chromatic intervals. double-reed mouthpiece.
Cor Anglais. (English Horn). (Corno Inglese).	Notation.  Real Sounds. 	with chromatic intervals. Transposing instrument, the music is written in a key one fifth higher than that of the composition. Double-reed mouthpiece.
Clarina in B flat. (Heckel). A substitute for the Holztrompete or Cor Anglais in "Tristan and Isolde" at Bayreuth.	Written  Real sounds 	with chromatic intervals. Like the clarinet, the clarina is tuned to B flat. The music is written for it in a key one tone higher than that of the composition. Single-reed mouthpiece.
Bassoon.	Notation. 	with chromatic intervals. Double-reed mouthpiece.

TABLE SHOWING THE COMPASS OF THE INSTRUMENTS OF THE ORCHESTRA (*continued*).

Double Bassoon. (Haseneier - Morton).		with chromatic intervals. The music is written for it an octave higher to avoid ledger lines. Double-reed mouthpiece.
Kontrafagott. (W. Heckel).		do.
Clarinet in B flat.	Real Sounds. 	with chromatic intervals. The music for it is written in a key one tone higher than that of the composition. Single-reed mouthpiece.
Clarina (Heckel).	See page 188.	
Clarinet in A.	Real Sounds 	with chromatic intervals. A transposing instrument for which the music must be written in a key $1\frac{1}{2}$ tone higher than that of the composition. Single-reed mouthpiece.

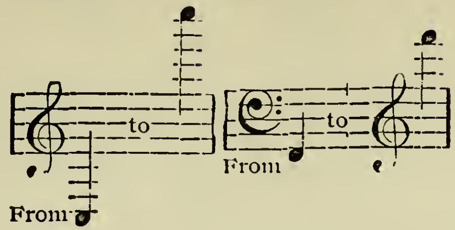
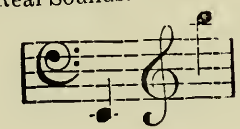
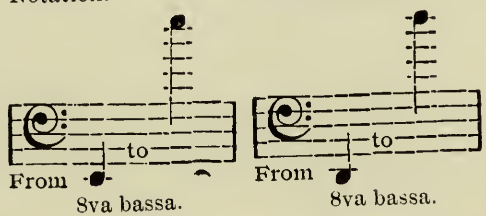
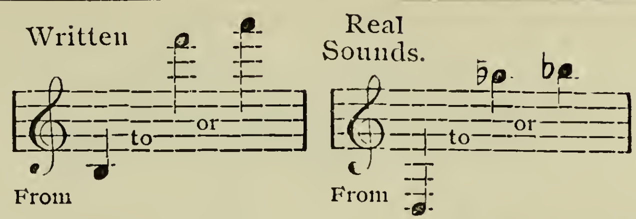
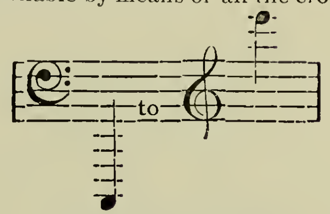
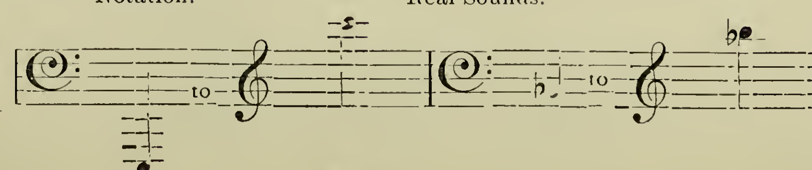
Basset Horn.	Notation. Real Sounds. 	with chromatic intervals. A transposing instrument for which the music must be written in a key a fifth higher than that of the composition. Single-reed mouthpiece.
Bass Clarinet in B flat.	Real Sounds. 	with chromatic intervals. A transposing instrument like the other clarinets. See clarinet in B flat. Single-reed mouthpiece.
Pedal Clarinet in B flat.	Notation. Real Sounds. 	with chromatic intervals. A transposing instrument. See clarinet in B flat. Single-reed mouthpiece.

TABLE SHOWING THE COMPASS OF THE INSTRUMENTS OF THE ORCHESTRA (*continued*).

Saxophone in E flat.		with chromatic semitones. A transposing instrument for which the music is written a major 6th higher than that of the composition. For the other Saxophones calculate in the same manner keeping C as the standard.
	BRASS WIND.	
French Horn.	Obtainable by means of all the crooks.  practically impossible).	with chromatic semitones. On valve horns. A transposing instrument for which the music is generally written in C, with the key of the crook indicated. Funnel shaped or horn mouthpiece.
Wagner Tubas. in B flat (tenor).	Notation. Real Sounds. 	with chromatic intervals. A transposing instrument for which the music must be written in a key one tone higher than that of the composition.
in F (Bass).		with chromatic intervals. A transposing instrument for which the music must be written in a key a fifth higher than that of the composition. horn mouthpiece.

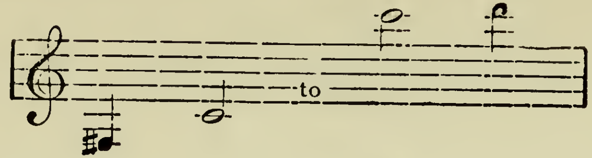
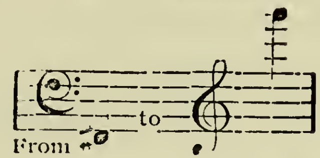
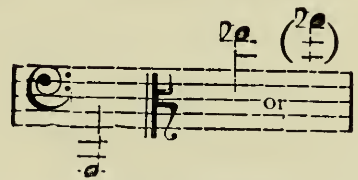
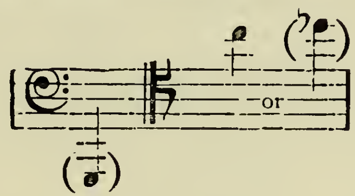
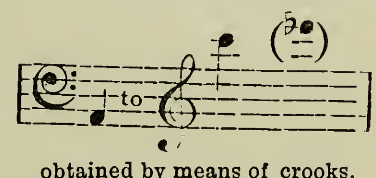
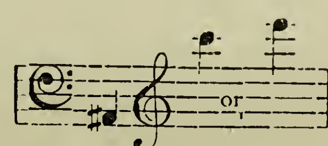
The Cornet.	 	with chromatic intervals. Non-transposing; cup-shaped mouthpiece.
The Cornophone.	 	with chromatic semitones. Non-transposing; funnel-shaped mouthpiece.
Trombone. Alto in E flat or F.	 not often obtainable.	with chromatic semitones. The extreme compass has in each case been given; the notes in brackets are very difficult to obtain.
Tenor Trombone in B flat.	 not often possible.	Non-transposing instrument.

TABLE SHOWING THE COMPASS OF THE INSTRUMENTS OF THE ORCHESTRA (*continued*).

Bass Trombone in F or G or double slide in E flat.		cup-shaped mouthpiece.
Contrabass Trombone in B flat, an octave below the tenor-bass.		
Trumpet. (natural).		Transposing instrument by means of crooks. cup-shaped mouthpiece.
Slide Trumpet.		with chromatic intervals. Non-transposing; cup-shaped mouthpiece.

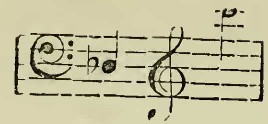
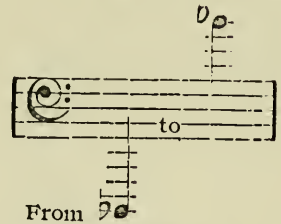
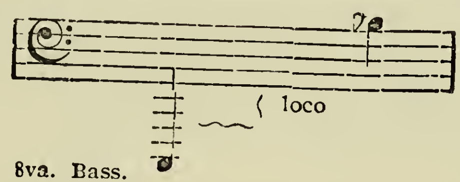
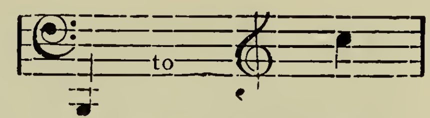
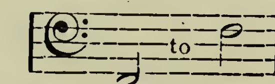
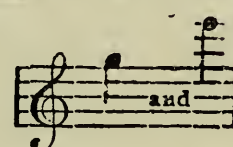
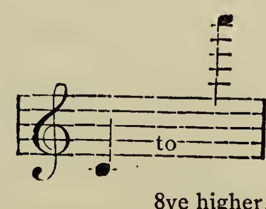
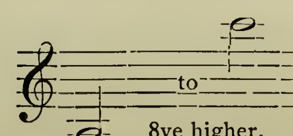
Valve Trumpet.		Non-transposing; with chromatic semitones.
Tubas. Euphonium, B flat.		Non-transposing; This compass is dependent on the number of valves it is therefore approximate.
Bass Tuba in E flat.		Non-transposing; cup-shaped mouthpiece.
Contrabass Tuba in B flat, an octave below the Euphonium.		Non-transposing; This compass is dependent on the number of valves and is therefore approximate.

TABLE SHOWING THE COMPASS OF THE INSTRUMENTS OF THE ORCHESTRA *(continued)*.

Ophicleide in C.		Non-transposing; with chromatic intervals.
	PERCUSSION	
Kettledrum.		Non-transposing.
Ancient Cymbals.		Non-transposing.
Xylophone.		Non-transposing; with chromatic semitones.
Keyed Harmonica and Glockenspiel.		Non-transposing.

REEVES'

MUSICAL LITERATURE LIST

BIOGRAPHY
HISTORY
CRITICISM
ÆSTHETICS
ESSAYS

ORGAN
ORCHESTRA
PIANO
VIOLIN
VOCAL

GENERAL
ETC

CONTAINING WORKS

In All Departments of . .

. . . . Musical Literature

PUBLISHED BY

W. REEVES, 83, Charing Cross Rd., London, W.C.

Revised Editions of this Catalogue B are issued in the Spring and Autumn of each year.

GENERAL.

IMAGINARY INTERVIEWS WITH GREAT COMPOSERS.

A Series of Vivid Pen Sketches in which the Salient Characteristics and the often Extravagant Individuality of each Composer are Truthfully Portrayed. By GERALD CUMBERLAND Crown 8vo, cloth, gilt top, 6s.

"They are vivid impressionist sketches, cleverly executed, and very interesting."—*Music.*

RUTLAND BOUGHTON, in the columns of *The Musical Standard* writes: "These are not mere fantastic juggleries, but studies of the various composers from their own standpoints to their art. They afford, with one or two striking exceptions a really valuable insight into the very nature of the different masters; and so into the nature of their music. And because of this the book will be a great help to the musical student. When we are set to study music we are generally crammed to choking-point with theoretical and anatomical instruction; and because that deals only with the appearance of the art, it is of very little final value. But a book like this of Cumberland's cuts right to the core of the composer's heart and so opens up for us a direct way to the innermost secrets of his mood and emotion . . . . The Beethoven interview is large and dark and fierce and tender. A reading of it will give a better introduction to the Fifth and Ninth Symphonies and the greatest sonatas, than a year's course of analytical study . . . . a book which is musical criticism in the highest and only final sense of the word. A book of sympathetic interpretation is constructive work. A book of analytical theory is nihilism. The publisher may congratulate himself on his share of the production, it is one of the best things he has done."

"There may be people who will read Mr. Cumberland's book simply as literature, not so much for what he says as for the way he says it. Mr. Cumberland has a wealth of expression and a delicacy and a balance that keep it ever in check. Whether he visits the femininely fanciful Chopin, the primly genial Haydn, the sombre sensitive Tchaïkovsky or the gay, yet business-like, Arthur Sullivan, he knows how to draw out his man . . . . Each of his interviews is the revelation of a personality and each is a masterly piece of literary presentment . . . . Mr. Cumberland has put musicians under a debt of gratitude by placing in their hands a book that will do more than inform, that will inspire."—PERCY A. SCHOLES in *Musical Opinion.*

"To conjure up visions of the creator of a wonderful symphony or a great choral work in his surroundings, and to picture the various influences that are making their indelible mark on his manuscript; what can prompt a wider understanding, a keener appreciation and a sounder criticism of the finished score? . . . . Biographies of academic severity and critical analysis fill our library shelves, but little or nothing has been written calculated to enlist or stimulate a greater interest in the psychological thought and instincts of the great musical geniuses. The outlook of a philosopher is often the subject of a dozen critical and discursive publications. Yet the equally important consideration of the peculiar pedantries of the individual composer, as treated in these imaginary interviews, seems wholly original . . . . The book should be read by all music-lovers."—*Manchester City News.*

"All lovers of music will delight in the perusal of this extremely readable volume . . . . the reader will learn much of that psychological complexity that often accompanies great and creative genius. Although the interviews are but sketches they contain nothing that is not essentially true and characteristic."—*Montrose Standard.*

504 **OLD WELSH AIRS.** The Lays of My Land. Alawon Fy Ngwlad. Collected by N. BENNETT. Arranged for the Pianoforte or Harp by D. E. EVANS. With 12 Portraits of the old Welsh Harpers, and a short Account of their Lives. Together with an Essay on Pennilion Singing. Portraits of 10 Celebrated Pennilion Singers. 198 pages, the original two volumes bound in one vol., folio, cloth gilt, lettered 12s. 6d. net.

The above is the largest collection of Welsh Airs ever published and includes some of the oldest Cambrian melodies extant, and contains in the one volume the original publication to subscribers issued in two volumes at £2 2s. Notwithstanding the collections of Parry, Jones, Thomas and others, hundreds of old Cambrian melodies still remained scattered throughout the country in manuscripts, or were retained in the memory of harpists, Pennilion singers and others who loved and cherished the folk-songs of the past.

To collect some of these treasures, and rescue them from inevitable oblivion, says the compiler, has been to me a labour of love for more than half a century * * I secured many an old air of exquisite beauty from some venerable harpist, or aged Pennilion singer tottering on the brink of the grave

ENGLISH GLEE AND MADRIGAL WRITERS. By W. A. BARRETT. 8vo, cloth, 2s. 6d.

"Mr. Barrett is highly to be commended, no less for the vast amount of reliable information which he has collated upon the subject in hand, than for the concise manner in which, for the benefit of the reader, he has compressed it into a small space."—*Monthly Musical Record.*

NATIONAL SCHOOL OF OPERA IN ENGLAND. Being the Substance of a Paper read before the Licentiates of Trinity College, March, 1882. By FRANK AUSTIN. Post 8vo, sewed, 6d.

RATIONAL ACCOMPANIMENT TO THE PSALMS. By F. GILBERT WEBB. Post 8vo, 6d.

SONGS FROM THE RAVEL. (Words for Musical Setting). A Book of Prose-Lyrics from Life and Nature. By ERNEST AUSTIN. Op. 30. Crown 8vo, sewed, 2s. 6d.

ÆSTHETICS, CRITICISMS, ESSAYS.

THE SYMPHONY WRITERS SINCE BEETHOVEN, Schubert, Schumann, Götz, Brahms, Tchaïkovsky, Brückner, Berlioz, Liszt, Strauss, Mahler, Mendelssohn, Saint-Saëns, etc. By Felix Weingartner. Translated by A. Bles. Many Portraits. Cr. 8vo, cloth, gilt top, 6s.

"Most stimulating and suggestive, full of acute thinking, of felicitous expression."—*New York.*

"The book is certainly well worth reading."—*Daily Chronicle.*

The author's intimate familiarity with the works he discusses lends a peculiar interest to the volume, which is certainly worthy a music lover's attention.

"A most fascinating book * * * the works of the various composers are critically discussed in regard to form and orchestration."—*Musical Star.*

GREATER WORKS OF CHOPIN. (Polonaises, Mazurkas, Nocturnes, etc.), and how they should be played. By J. Kleczynski. Translated by Miss N. Janotha and Edited by Sutherland Edwards. With Portrait, Facsimile, etc. Crown 8vo, cloth, 5s.

"A new book on Chopin which will doubtless receive a warm welcome from the lovers of the greatest genius of the pianoforte. * * * What gives this book a unique value of importance as a novelty is that it includes what is left of Chopin's notes for a pianoforte method which, brief as it is, contains some valuable and interesting hints which will benefit all pianists and students."—*New York Evening Post.*

MEZZOTINTS IN MODERN MUSIC. Brahms, Tchaïkovsky, Chopin, Strauss, Liszt and Wagner. By Jas. Huneker. Second Edition. Crown 8vo. cloth, gilt top, 7s. 6d.

Contents.—The Music of the Future (Brahms)—A Modern Music Lord (Tschaikowsky)—Richard Strauss and Nietzsche—The Greater Chopin—A Liszt Etude—The Royal Road to Parnassus—A Note on Richard Wagner.

"Essays filled with literary charm and individuality, not self willed or over assertive. but gracious and winning, sometimes profoundly contemplative, and anon frolicsome and more inclined to chaff than to instruct—but interesting and suggestive always."—*New York Tribune.*

THE PLACE OF SCIENCE IN MUSIC. By H. Saint-George. Addressed to advanced students of that branch of musical knowledge commonly called Harmony. 8vo, sewed, 1s.

Mr. Baughan rejects the academic view of form as firmly as Mr. Saint-George rejects the academic view of harmony and counterpoint. The academics base their harmonic theories on laws of nature which Mr. Saint-George shows do not exist. . . . . Has joined Mr. Saint-George in the attack which will end in the total discomfiture of the academics.—J. F. Runciman in the *Saturday Review.*

MUSIC AND MUSICIANS. Essays and Criticisms, by ROBERT SCHUMANN. Translated, Edited and Annotated by F. R. RITTER. Portrait of Robert Schumann, photographed from a Crayon by BENDEMANN. First Series, 7th Edition. Thick cr. 8vo, cloth, 419 pages, 8s. 6d.

Ditto. Second Series, Third Edition. Thick crown 8vo, cloth, 540 pages, 10s. 6d.

There are two sides to musical criticism, both equally interesting; the one, which is scientific analysis of musical form and treatment, possible only to experienced musicians, the other, which is the spiritual perception of the æsthetic side and influence of music, possible for any great mind whose perceptions are keenly cultivated in the highest canons of any art. Schumann represented the ideal musical critic, in that both of these essential points in criticism are to be found in his writings.—From the Introduction to "Ruskin on Music."

Scarcely find words sufficiently strong to express our delight * * * a book so rich in thought, so full of humour, so remarkable for its refined sarcasms, so original in its criticisms, so sprightly and elegant in language.—KARL MERZ in the *Musical World.*

The translations are vigorous and clear, and the exact sense of the originals, as far as possible, has been preserved.—*New York Musical Courier.*

A disquisition upon the value of Schumann's labour as an art critic seems quite uncalled for at the present date. Suffice it to say that it can hardly be over-estimated, and that his writings are as interesting and instructive at the present as they were when they were first penned.—*Monthly Musical Record.*

There is no use in trying to quote characteristic passages, because the volume is of such uniform merit and such continuous interest that it is impossible to make a selection. Musicians who take up the book will not find it easy to put it down again.—*Athenæum.*

Most fascinating reading, even to those who are not deeply versed in music.—*Westminster Review.*

Schumann was so just and fearless a critic, and his opinions are conspicuous for such sound judgment, that they are valuable in themselves, altogether apart from the celebrity of their author. Some parts of the book will attract special notice, such, for instance, as the able defence of the then condemned Berlioz * * * * the book also contains notices of composers whom the world has forgotten.—*Music Trades' Review.*

MOZART'S DON GIOVANNI. A Commentary, from the Third French Edition of Charles Gounod. By W. CLARK and J. T. HUTCHINSON. Crown 8vo, cloth, 3s. 6d.

GOUNOD says in his Preface:—Don Giovanni, that unequalled and immortal masterpiece, that apogee of the lyrical drama, has attained a hundred years of existence and fame; it is popular, universally accepted and consecrated for ever. Is it understood? * * * Is it admired? Is it loved as it should be? The score of Don Giovanni has exercised the influence of a revelation upon the whole of my life; it has been and remains for me a kind of incarnation of dramatic and musical infallibility. I regard it as a work without blemish, of uninterrupted perfection, and this commentary is but the humble testimony of my veneration and gratitude to the genius to whom I owe the purest and most permanent joys of my life as a musician, etc.

THE DEEPER SOURCES OF THE BEAUTY AND EXPRESSION OF MUSIC. By JOSEPH GODDARD. Author of "Musical Development," "A Study of Gounod's Redemption," etc. With many Musical Examples. Crown 8vo, bevelled cloth, 3s. 6d.

CONTENTS.—CHAPTER I.—The Seeming Anomaly between the Human Origin of Music and its Elevated Beauty. CHAPTER II.—Abstract Musical, like Natural, Beauty is a Chance Fitness or Coincidence, of which the Visible Conditions are the Plasticity in Human Faculties and the Diversity in Outward Nature. CHAPTER III.—Timbre and Vowel-Sound briefly Analyzed; the Sensibility formed in the Ordinary Course of Natural Evolution to answer to them, lets into our Nature the World of Harmony. CHAPTER IV.—The Larger Reasons why Music is Free of the Objective World, and Discontinuous. CHAPTER V.—Contrast in Scenic Effect and in Music. CHAPTER VI.—The Source of those Distinct Suggestions of the General World which are Fundamental to the Musical Sensation—Position, Direction, Movement and Visual Form. CHAPTER VII.—The Second Factor in the Inherent Connection between Music and Motion: the Sense of the Horizontal latent in the Principle of Time. CHAPTER VIII.—Tonality. The Principles of Unity and Delimitation. CHAPTER IX.—Statement of the Full Case for the Explicability of Musical Expression from the Standpoint of the Influence of Speech. CHAPTER X.—Darwin's Hypothesis of Musical Expression. The Tendency of Music to Grow Old. The Influence of Inherited Feeling in the Effect upon us of Art and Nature. CHAPTER XI.—The Limitation involved in Music being the World of a Single Sense, is a Source of its Power. Statement of the Principle of Arbitrary Association. CHAPTER XII.—Summary and Concluding Remarks.

BEETHOVEN'S PIANOFORTE SONATAS Explained for the Lovers of the Musical Art. By ERNST VON ELTERLEIN. Translated by E. HILL, with Preface by ERNST PAUER. Entirely New and Revised Edition (the Sixth). With Portrait, Facsimile and View of Beethoven's House. Crown 8vo, cloth, 3s. 6d.

"He writes with the ripe knowledge and thorough understanding of a practical musician. Every musical student or amateur can safely trust him as a competent and agreeable guide. This English translation is most opportune, and will doubtless assist many a lover of Beethoven's music to appreciate more keenly the master's Sonatas."—E. PAUER.

BEETHOVEN'S SYMPHONIES in their Ideal Significance, Explained by ERNST VON ELTERLEIN. Translated by FRANCIS WEBER. With an Account of the Facts Relating to Beethoven's Tenth Symphony. By L. NOHL. Second Edition, with Portrait. Crown 8vo, cloth, 3s. 6d.

This small volume is intended in the first place, and more especially, for the earnest and thoughtful amateur, to whom it is to be a guide and companion in the artistic enjoyment and conscious appreciation of Beethoven's Symphonic Masterpieces. At the same time the work may not be unwelcome also to the practical musician.

HOW TO PLAY CHOPIN. The Works of Chopin and their proper Interpretation. By J. Kleczynski. Translated by A. Whittingham. Fifth Edition. Woodcut and Music Illustrations. Post 8vo. cloth. 3s. 6d.

"Contains the cream of Chopin's instructions to his own pupils. To admirers of Chopin and players of his music we should say this book is indispensable."—*Bazaar.*

"It contains many interesting details and profitable hints. The author has much to tell us about the great pianist, as a teacher as well as a composer. Chopin as a composer remains to us as a heritage, but the tradition of his playing and teaching is naturally becoming every year more and more vague. So our author deserves praise for his attempt to snatch from oblivion any remembrances of the 'manner and touch' of the master."—*Academy.*

FROM LYRE TO MUSE. A History of the Aboriginal Union of Music and Poetry. By J. Donovan. Crown 8vo, cloth, 2s. 6d. net (pub. 5s.)

Chapters:—1. Musical Impression. 2. History of Aboriginal Music. 3. Music and Individuality. 4. Fusion of Rhythm and Tones. 5. Fusion of Tones and Words. 6. How Harmony was Developed 7. Definition and Diagram of Evolution of Music.

SCHUMANN'S RULES AND MAXIMS. For young Musicians. Sewed, 2d.

"The 'Rules and Maxims' might have been entitled 'Proverbs,' for the truth of none of them can be called into question, and they give students the very best advice."—*Figaro.*

"A valuable store of hints and information, shrewdly written and pertinently put."—*Musical Opinion.*

BEETHOVEN'S SYMPHONIES Critically Discussed by A. Teetgen. With Preface by John Broadhouse. Second Edition. Post 8vo, cloth, 3s. 6d.

"We must say that many of his observations are not only acute but extremely just."—*Musical Times.*

"Mr. Teetgen gives evidence of deep knowledge of his hero's works, he supplies the reader with food for thought and reflection. We commend this little book to the attention of our readers."—*Musical Opinion.*

"Mr. Teetgen is a devout, though not a blind, worshipper of Beethoven." —*Musical Standard.*

PURITY IN MUSIC. By A. F. Thibaut. Translated by J. Broadhouse. Crown 8vo, cloth, 2s. 6d.

Contents.—1. On the Chorale. 2. Church Music other than the Choral. 3. Popular Melodies. 4. The Educating Influence of Good Models. 5. Effect. 6. On Judging the Works of Great Masters. 7. As to a Liberal Judgment. 8. On Perversions of Text. 9. Choral Societies.

Schumann says:—"A fine book about music, read it frequently."

WOMAN AS A MUSICIAN. An Art Historical Study. By F. R. Ritter. 8vo, sewed, 1s.

BIOGRAPHICAL.

MOZART: THE STORY OF HIS LIFE AS MAN AND ARTIST. According to Authentic Documents and other Sources. By Victor Wilder. Translated by F. Liebich. To which is now added a Comprehensive Bibliography of Mozart Literature from every source, English and Foreign and a List of his Compositions Published and Unpublished. With 23 Portraits gathered from Various Sources. With Index. 2 volumes. Crown 8vo, cloth, 10s.

Jan. Ev. Engel, *Imperial Librarian*, writing from the Mozarteum, Salzburg (Mozart's birthplace) on behalf of the Mozart Society, says :—

[*Translation.*]

I congratulate the publisher on the exemplary correctness of the edition and the author on having had at his disposal such rich and almost inexhaustible material from ancient down to most modern times, as foundation for his excellent work. This beautiful and valuable work, which has been translated with great thoroughness, has every right to a place *in the foremost ranks of English literature* to the honour of the great master whose life and work the gifted author has had presented to the English people in a most attractive way, besides conveying to them his appreciation of his (Mozart's) immortal compositions in a manner that has not been done previously in English.

" This biography in two handy volumes and published at a moderate price, will, we are sure, be warmly welcomed by the thousand and one admirers of one of the most astounding geniuses in musical history."—*Pall Mall Gazette.*

" Its merits are its enthusiasm, its judicious selection from an enormous mass of material, and its consecutiveness."—*Birmingham Gazette.*

Arthur Symons, in an appreciative notice in *The Saturday Review* said :—" The book is living, and to read it is to suffer over again this perfect and punished life."

" The most complete work extant on the Salzburg composer, or at any rate it is comparable with the biography written by Otto Jahn, inasmuch as it contains many things relating to Mozart which are not to be found in other works. It is impossible and unnecessary to review so comprehensive a work as this in a limited space. We can only recommend it as a carefully written work which is invaluable for reference."—*Music.*

The Daily Telegraph in a long review says :—No apology was needed in offering to music-lovers a remarkably comprehensive record of the career of one of the most astonishing geniuses the world has ever known. Mozart, as everyone knows, died young, but irrespective of his creative work, his life, short as it was, afforded the diligent biographer far greater scope than have the lives of not a few composers who attained comparative longevity. The author of the French work now translated went to so many sources for authentic details and general information that his pages were well entitled to consideration even of readers acquainted with the salient facts in the life of the famous composer, and the two volumes under discussion would be welcome if only for their completeness, and at the same time their freedom from trivial anecdotage of the kind of which so much clings to the lives of many great musicians.

MUSICAL MEMORIES. By William Spark, *Mus.Doc. (late Organist of the Town Hall, Leeds).* Revised Popular Edition. With 16 Portraits. Thick crown 8vo, cloth. Published at 6s.

"A pleasantly written book of reminiscences of a large number of distinguished persons in the world of music . . . . Dr. Spark knows how to tell a good story, and has not a few new and old to tell; while the tone of his book is so invariably cheerful and good natured."—*Saturday Review.*

"The author speaks of things that he understands and of persons that he has known."—*St. James' Gazette.*

"Just one of those pleasant books which are instructive without being tedious, and amusing without being frivolous. The book is very pleasant reading and we counsel our readers to get it without delay."—*Musical Standard.*

TCHAIKOVSKY. His Life and Works. With Extracts from his Writings and the Diary of his Tour Abroad in 1888. By Rosa Newmarch. Edited with Additional Chapters by E. Evans, 1908. With a Complete Classific Account of Works, Copious Analyses of Important Works, Analytical and other Indices; also Supplement dealing with "The Relation of Tchaïkovsky to Art-Questions of the Day." Portrait and Index. Thick crown 8vo, cloth, gilt top, 7s. 6d.

"The chapters written by Mr. Edwin Evans, Senr., are excellent and should be perused with attention, as they denote a keen, critical insight and a broad outlook on matters generally. * * * The popularity of Tchaïkovsky in England is certainly not on the wane, and the present volume will doubtless be welcomed by the many admirers of the Russian master." —*Morning Post.*

"A well planned and in parts fascinating study of a composer whose rare charm of melodic beauty and fine sense of musical proportion have completely captured the taste of the time * * * It is the fullest and most authoritative monograph of Tchaïkovsky available for English readers."—*The Scotsman.*

"Issued from the Press which in recent years has given to the musical world so much that is of intrinsic value—that of the firm of William Reeves, publisher of *The Musical Standard*—this volume, dedicated 'to Henry J. Wood, who has helped to realise so many of Tchaïkovsky's masterpieces, and to his wife,' is first in the field in thoroughness and in style. * * * is so presented as to be of absorbing interest to the ordinary lover of music, of value to the student, and indispensable to such as desire to have at hand reliable analyses of the compositions of the greatest of Russian composers. Rosa Newmarch is perhaps responsible to a greater degree than anyone in this country for bringing under notice Tchaïkovsky. To her pen is due the best and ripest of the original matter the volume contains; although the work of Mr. Edwin Evans is also of such a character as to merit high praise. * * * Tchaïkovsky was a world artist and he speaks in a language that is growingly appreciated by the scholars of all nations. * * The volume will assuredly rank among the standard works relating to musical art."—*Sheffield Daily Independent.*

NOTICE OF ANTHONY STRADIVARI. The celebrated Violin Maker known by the name of Stradivarius, preceded by Historical and Critical Researches on the origin and Transformations of Bow Instruments, and followed by a Theoretical Analysis of the Bow and Remarks on Francis Tourte. By F. J. FETIS. Translated by J. BISHOP. Facsimile of a Letter of Stradivarius. 8vo, cloth, 5s.

The greater part of the matter in above is the work of M. Vuillaume, who spent the greater part of his life in studying the principles which guided Stradivarius in his labours. With the aid of Fétis and his additional suggestions and matter the now celebrated work was produced.

CHOPIN: THE MAN AND HIS MUSIC. By JAMES HUNEKER. Author of "Mezzotints in Modern Music." With Musical Examples. Thick crown 8vo, cloth, 10s.

"Mr. Huneker is a Chopin enthusiast. He accords admiration to Brahms, to Wagner, to Tchaïkovsky: his worship is reserved for Chopin. Being gifted with clear insight and imagination which grasp many and diverse moods Mr. Huneker is a sane critic and a manly. . . . . There is no pretence at new material in the book. Mr. Huneker has garnered all that has been written about the composer and he has threshed out the grain from the chaff. The result is, therefore, of value."—*Musical Standard.*

"The volume will at once take its place in the front rank of books on Chopin. . . . . . the masterly chapter of 74 pages on the etudes will soon be found indispensable by all teachers and students of the pianoforte."—*The Nation (U.S.A.)*

"A work of unique merit, of distinguished style, of profound insight and sympathy and of the most brilliant literary quality."—*The New York Times.*

"Of works on Chopin published since Niecks' life, this is by far the most important."—G. C ASHTON JONSON in "A Handbook to Chopin's Works."

LIFE OF CHOPIN. By FRANZ LISZT. New and very much Enlarged Edition. Translated in full now for the first time by JOHN BROADHOUSE. Crown 8vo, cloth, 6s.

GEORGE SAND describes it as "un peu exuberent en style, mais rempli de bonnes choses et de très belles pages."

G. C. ASHTON JONSON says in his "Handbook to Chopin's Works":—"For the personal reminiscences of one of the greatest composers by one of the greatest executive artists of the world must be invaluable to the Chopin student."

"Franz Liszt has written a charming sketch of Chopin's life and art."—*Ency. Brit.*

"Liszt's criticisms upon his separate works have all the eloquent mysticisms to be expected from him; and the biography is a book musicians will always prize."—*Sunday Times.*

"It will afford the student the greatest help in understanding the undercurrent of emotion which characterises the works of Chopin."—*Morning Post.*

"Let us therefore contribute one good word to help it forward, as we would tend a flower which springs up spontaneously over the grave of one we love."—*Musical Times.*

FREDERIC CHOPIN: HIS LIFE AND LETTERS. By Moritz Karasowski. Translated by E. Hill. New Edition Revised and further Letters added written during the composer's Sojourn in England and Scotland, 1848-9. Second and Revised Edition. With 8 Portraits and a Facsimile. 2 volumes. Crown 8vo, bevelled cloth, 10s.

"Chopin is and remains the boldest and proudest poetic spirit of the age."—Robert Schumann.

"A book with which all students of Chopin must needs be acquainted. It contains a good deal of first hand information and is our only source for many valuable documents."—*The Guardian.*

The author in his Preface says:—Several years of friendship with the family of Frederic Chopin have enabled me to have access to his letters and to place them before the public. . . . In compliance with the wishes of many of Chopin's friends and admirers I have undertaken to sketch his career from the materials afforded me by his one surviving sister, from his letters, etc. . . . in this work which contains full particulars about Chopin's youth I have corrected the erroneous dates and mis-statements which have found their way into all the German and French periodicals and books.

Grove's *Dictionary of Musicians* says:—The truth about Chopin's birth, family, health, character, friendships, early training, and the dawn of his career as a player and composer was not known until the publication of Moritz Karasowski's recent and trustworthy biography.

"The first serious attempt at a Biography of Chopin."—Prof. Niecks.

"Gives bits of information found nowhere else and the Letters of Chopin make the book invaluable to those who would really know the Polish master."—*Musical America.*

MAKERS OF MUSIC. Biographical Sketches of the Great Composers. With Chronological Summaries of their Works and Facsimiles from Musical MSS. of Bach, Handel, Purcell, Dr. Arne, Gluck, Haydn, Mozart, Beethoven, Weber, Schubert, Berlioz, Mendelssohn, Chopin, Schumann, Wagner, Verdi, Gounod, Brahms and Greig, with General Chronological Table. By R. Farquharson Sharp. Portrait of Purcell. Third Edition. Crown 8vo, cloth, 5s.

The author's endeavour throughout this work has been to convey an impression of the personality of each composer, as well as to furnish biographical detail. At the end of each biography is a tabulated list of the composer's works and dates of production, together with a facsimile from one of his original manuscripts. A useful volume, got up in good style and well adapted for a gift or prize. Has speedily run into three editions.

TEMPLETON AND MALIBRAN. Reminiscences of these Renowned Singers, with Original Letters and Anecdotes. Three Authentic Portraits by Mayall. 8vo, cloth, 2s. 6d.

CHOPIN: AS REVEALED BY EXTRACTS FROM HIS DIARY. By COUNT TARNOWSKI. Translated from the Polish by N. JANOTHA. With Eight Portraits. Crown 8vo, bevelled cloth, 2s. 6d. net (or paper cover 1s. 6d. net).

"Throws many curious sidelights on the character of the great composer."—*Sunday Sun.*

"The notes on Chopin were written by special request and under the direction of Princess Marceline Czartoryska. From her, Count Tarnowski received many interesting details as well as letters written by Chopin, in which the master alludes to many of his compositions as well as to the conditions under which they were written. Really an absorbing little tome, etc."—*Musical Standard.*

BEETHOVEN. By RICHARD WAGNER. With a Supplement from the Philosophical Works of Arthur Schopenhauer. Trans. by EDWARD DANNREUTHER. Third Edition. Crown 8vo, cloth, 6s.

"This characteristic essay, a written exposition of Wagner's thoughts on the significance of the master's music, may be read with advantage by all students."—W. H. WEBBE in *The Pianist's A. B. C.*

"It is a plain duty to be familiar and even intimate with the opinion of one famous man about another. Gladly therefore we welcome Mr. Dannreuther's translation of the work before us. Mr. Dannreuther has achieved his task with the conscientiousness of his nature and with a success due to much tact and patience."—*Musical Times.*

BIOGRAPHICAL DICTIONARY OF FIDDLERS. Including Performers on the Violoncello and Double Bass, Past and Present. Containing a Sketch of their Artistic Career, together with Notes of their Compositions. By A. MASON CLARKE. 9 Portraits. Post 8vo, bevelled cloth, 5s.

"We may here take the opportunity of recommending a useful book to all lovers of violins and violinists. Fiddlers, Ancient and Modern, is practically a little Biographical Dictionary, well arranged with some excellent portraits."—*Northern Whig.*

CHERUBINI. Memorials illustrative of his Life. By E. BELLASIS. Thick crown 8vo, cloth, 6s.

"The standard biography of Cherubini."

FRANZ LISZT. By T. CARLAW MARTIN. 12mo, bound, 1s. (paper, 6d.)

LIFE OF BEETHOVEN. By LOUIS NOHL. Translated by JOHN J. LALOR. Third Edition. With Portraits and Facsimile. Crown 8vo, bevelled cloth, gilt edges, 3s. 6d.

"A standard biography."

SKETCHES OF ENGLISH GLEE COMPOSERS. Historical, Biographical and Critical. From about 1735-1866. By D. Baptie. Post 8vo, bevelled cloth, 5s.

BALFE: HIS LIFE AND WORKS. By W. A. Barrett. Crown 8vo, bevelled cloth, 3s. 6d. net (pub. 7s. 6d.)

LIFE AND WORKS OF MOZART. By A. Whittingham Cloth, 1s. 6d. (or paper, 1s.)

LIFE AND WORKS OF HANDEL. By A. Whittingham. Cloth, 1s. 6d. (or paper, 1s.)

THE BACH LETTERS. Letters of Samuel Wesley, relating to the Introduction into England of the Works of Bach. Ed. by E. Wesley. Second Edition. 8vo, cloth, 2s. 6d.

DICTIONARY OF 4,000 BRITISH MUSICIANS. From the Earliest Times. By F. J. Crowest. **Crown 8vo, cloth,** 2s. (paper, 1s.)

A Dictionary of British Musicians—a work devoted exclusively to the names of native composers, instrumentalists, vocalists, writers, etc., who have contributed to the making of English musical art from the earliest times to the present. Blank spaces are left to each letter for any additional names to be written in.

PURCELL. By William H. Cummings, *Mus.Doc.* Crown 8vo, cloth, 2s. 6d.

The only available life of this great English musician. Dr. Cummings spared no time or trouble in making it as far as possible a complete and exhaustive treatise.

CHERUBINI. By F. J. Crowest. Crown 8vo, cloth, 2s. 6d.

Contents:—Birth and Parentage—Under Sarti—Earliest Works—Visits London—*Lodoiska*—*Medée*—*Les Deux Journées*—*Faniska*—Berlioz and *Ali Baba*—Cherubini's Overtures—A Sacred Music Composer—Mass in F—Mass in D minor—Mass in C—Requiem in C minor—Requiem in D minor—Cherubini's Prolificness—At Catel's Grave—Death, Obsequies and Career—His Influence upon Music—Estimate of his Dramatic Works—Of his Sacred Works—Influence as a Teacher—Temperament and Disposition—Anecdotes of Cherubini—Catalogue of Compositions—Index.

SKETCHES OF GREAT VIOLINISTS AND GREAT PIANISTS. Biographical and Anecdotal, with Account of the Violin and Early Violinists. Viotti, Spohr, Paganini, De Beriot, Ole Bull, Clementi, Moscheles, Schumann (Robert and Clara), Chopin, Thalberg, Gottschalk, Liszt. By G. T. Ferris. Second Edition. Crown 8vo, bevelled cloth, 3s. 6d. (or cloth, gilt edges, 4s. 6d.)

A very useful book for a prize or gift.

PORTRAIT GALLERIES.

SIXTY YEARS OF MUSIC. A Record of the Art in England during the Victorian Era. Containing 70 Portraits of the most Eminent Musicians. Oblong quarto, boards, cloth back, 2s. 6d.

NATIONAL PORTRAIT GALLERY OF BRITISH MUSICIANS. By John Warriner, Mus.D. Trinity College, Dublin. Introduction by Joseph Bennett. Over 500 Photo Portraits of well-known and eminent living Musicians of Great Britain and Ireland, with short Biographical notice of each. The whole bound in one handsome oblong folio volume, cloth lettered. Offered for 7s. 6d. net, post free (or 8s. post free abroad), (published 14s. net).

REEVES' CATALOGUE OF MUSIC AND MUSICAL LITERATURE. Ancient and Modern, Second-Hand and New; containing the Contents of Libraries recently purchased, with a large quantity of Curious, Scarce, and Useful Music: Full Scores, Organ Music, Duets, Trios, Quartetts, Quintetts, Sextetts, Septetts, etc.; Tutors, Historical, Theoretical and Biographical Works in English, French, German, Italian, Spanish, Dutch, etc., including some Works of the greatest rarity and value. On Sale for Cash. This Catalogue sent post free on application.

"Mr. W. Reeves, who has established his claim to be regarded as the recognized publisher of English Musical Literature, has a strong list of books for the amateur and the professor."—*Publishers' Circular.*

"The best and safest method for the inexperienced to adopt, is to make application to some leading and trustworthy publisher of musical books of the class in question, relying on his judgment and the traditions of his house to supply what is genuine and suitable. Without being invidious, we may say that such a publisher is Mr. W. Reeves."—*Bazaar.*

HISTORY.

THE MUSIC OF THE MOST ANCIENT NATIONS. Particularly of the Assyrians, Egyptians and Hebrews; with special reference to recent discoveries in Western Asia and in Egypt. By CARL ENGEL. With numerous Illustrations and Index. Thick 8vo, cloth. Published at 18s., now offered for 8s. 6d. net.

CONTENTS:—CHAPTER I.—THE OLDEST RECORDS ON MUSIC. Representations of Musical Instruments on Ancient Sculptures and Paintings—National Music applied to Ethnology—Monumental Records referring to Assyrian Music—The Ruins of Nimroud, Khorsabad and Kouyunjik—The Extent to which the characteristics of Assyrian Music can be Ascertained from the Representations of the Instruments—The Gradual Development of Music from its Most Primitive State, demonstrated by a Comparison of the Music of Modern Nations in Different Stages of Civilization—The Earliest Musical Instruments—Examples of Musical Scales in Use among Nations in Different Stages of Civilization—The Earliest Development of Vocal Music—The Degree of Progress in Music attained by the Assyrians—Their Accomplishments in other Arts. CHAPTER II.—MUSICAL INSTRUMENTS OF THE ASSYRIANS. The Harp—Traces of the Ancient Oriental Harp in Europe—The Assyrian Lyre and the Nubian Kissar—The Assyrian Dulcimer and the Persian Santir—The Asor—The Tamboura or Guitar—The Double-pipe—The Trumpet—The Drum—Assyrian Bronze Bells found in the Ruins of Nimroud—Tambourine and Cymbals—Remarks on the Dancing of the Assyrian Musicians—Traces of some other Assyrian Instruments—Conjectures on the Antiquity of Stringed Instruments Played with a Bow—Some Peculiar Similarities between Ancient Asiatic and European Instruments—The Names of Musical Instruments. CHAPTER III.—ASSYRIAN MUSICAL PERFORMANCES. Various Combinations of Musical Instruments—Description of the Assyrian Bas-reliefs in the British Museum on which Musical Performers are Represented—Other Representations of Assyrian Musicians briefly Described—The Characteristics of the Performances—Fondness of the Assyrians for Music—Their Songs—Music employed in their Religious Worship—Court Bands of the Kings—Rhythmical Character of the Music—Oriental Music of the Present Time—Choruses of the Dervishes—Call to Prayer of the Muëzzin—Character of the Assyrian Instrumental Accompaniments—Harmony not Entirely Unknown to the Assyrians. CHAPTER IV.—MUSICAL SYSTEM OF THE ASSYRIANS. Resemblance of the Assyrian Music to that of other Ancient Oriental Nations—The Pentatonic Scale—The Present Existence of the Pentatonic Scale in various Asiatic Nations evidenced by Tunes from China, Siam, Java, Hindoostan, Burmah and Japan—High Antiquity of the Pentatonic Scale in Asia—The Order of Intervals in which the Assyrian Stringed Instruments appear to have been usually Tuned—Traces of the Pentatonic Scale among the Ancient Greeks—The Intervals of the Nubian Kissar—Subdivisions of the Whole Tone—Diffusion of the Pentatonic Scale—The Pentatonic Scale of the Ancient American Indians—Traces of the same Scale in the Music of the Scotch and other Celtic Races—The Peculiar Character of the Assyrian Music—The Probable Musical Notation of the Assyrians. CHAPTER V.—MUSIC OF THE ANCIENT EGYPTIANS

Egyptian Instruments—Various Harps—Bruce's Harps—Egyptian name of the Harp—The Trigonon—The Lyre—The Tamboura—Peculiar Stringed Instruments—Pipes, Flutes, Double-pipes—Trumpets—Drums and Tambourines—Curious Instruments of Percussion—The Sistrum—Crotala, Cymbals, Bells—Vocal and Instrumental Performances—The Egyptian Musical Instruments compared with the Assyrian—Opinions of some Musical Historians. CHAPTER VI.—MUSIC OF THE HEBREWS. Gradual Development of the Hebrew Music—Musical Instruments—Diversity of Opinion respecting the Real Nature of some of the Hebrew Instruments—Josephus' Account—The Chatzozerah—The Shophar—The Magrepha—Nebel and Nofre—The Hebrew Lyre—Vocal and Instrumental Performances—Hebrew Music of the Present Day—Literature of Hebrew Music—Eastern Origin of our own Music.

Grove's Dictionary says of Carl Engel:

"His attainments as a musician, his clear insight into books in many languages, his indefatigable perseverance in research, and the exercise of a rare power of judicious discrimination, made him one of the first authorities on his subject in Europe, he became a collector when opportunities were more frequent than they are now for acquiring rare instruments and books. He thus formed a private museum and library that could hardly be rivalled except by a few public institutions."

CHRONOMETRICAL CHART OF MUSICAL HISTORY.

Presenting a Bird's Eye View from the Pre-Christian Era to the XXth Century. By C. A. HARRIS, A.R.C.O., etc. On linen, folded in case, 2s. net (on special paper, 1s. net).

PROF. PROUT says:—I have examined your chart with great interest, both plan and execution seem to me to be excellent. You have managed to get a wonderful amount of information into a very small space. I think the Chart should be most useful and cordially wish you success.

DR. T. H. YORKE TROTTER, *Principal, London Academy of Music:* "Extremely well got up and will be useful."

DR. F. J. KARN, *Principal, London College of Music:* "Your very useful chart . . . . extremely well drawn up, showing in a compact form a great deal of information, and is a useful comparative form. Several professors have expressed delight with it."

Trinity College, London: "The Library Committee desire me to express their most cordial thanks for the donation of a copy of a 'Chronometrical Chart of Musical History' to the College library."—SHELLEY FISHER, *Secretary.*

"Like a Bovril tabloid—much nourishment in a little room."—HEAD MISTRESS, *South African School.*

"Sure to be very useful to students . . . excellently arranged and seems to be very accurate and thorough."—DR. RALPH DUNSTAN.

"Excellent chart . . . and is certainly valuable in helping the imagination to grasp synchronous events."—H. OSMOND ANDERTON, ESQ., *Librarian to Birmingham and Midland Institute School of Music.*

HISTORY OF HUNGARIAN MUSIC. By J. KALDY (*Director of the Royal Hungarian Opera).* Crown 8vo, bevelled cloth, 2s. 6d. net.

"Information not to be had anywhere else . . . . should be on every musical shelf."—*Internationalen Musikgesellschaft.*

THE GROWTH AND DEVELOPMENT OF MUSIC. Described in Chapters on the Study of Musical History. By EDWARD DICKINSON. With an Annotated Guide to Music Literature. Over 400 pp. Thick 8vo, cloth, 10s.

CHAPTERS:—1. Primitive Music. 2. Music of the Ancient Cultured Nations: Assyrians, Egyptians, Hebrews, Greeks and Romans. 3. Song in the Early Christian Church. 4. The Catholic Liturgy. 5. The Catholic Liturgic Chant. 6. Beginnings of Polyphonic Music. Popular Music in the Middle Ages. 7. The Age of the Netherlanders, 1400-1550. 8. Choral Music of the Sixteenth Century. 9. Early German Protestant Music. 10. Protestant Church Music in England. 11. The Madrigal—The Opera—Modern Tonality. 12. Early Growth of Instrumental Music. 13. The Violin and its Music: First Stages of the Suite and Sonata. 14. Keyed Chamber Instruments: Progress of the Clavier Suite and Sonata. 15. The Italian Opera in the Seventeenth Century. 16 The Opera Buffa, Seventeenth and Eighteenth Centuries. 17. Rise of the Opera in France, Seventeenth Century. 18. Italian Opera Seria in the Eighteenth Century. 19. Introduction of the Italian Dramatic Forms into German Religious Music. 20. Johann Sebastian Bach, 1685-1750. 21. Handel, 1685-1759. 22. Opera-Comique in the Eighteenth Century. 23. Gluck, 1714-1787. 24. Haydn, 1732-1809. 25. Mozart, 1756-1791. 26. Beethoven, 1770-1827. 27. The German Romantic Opera. Weber, 1786-1826. 28. The German Lied. Schubert, 1797-1828. 29. Piano Playing to about 1830. 30. Schumann, 1810-1856. 31. Mendelssohn, 1809-1847. 32. Chopin, 1809-1849. 33. Programme Music. 34. Berlioz, 1803-1869. 35. Liszt, 1811-1886. 36. The Opera in the Nineteenth Century to about 1850. I. Italian Opera. 37. The Opera in the Nineteenth Century to about 1850. II. French Opera. 38. Wagner, 1813-1883. 39. Recent Music in Germany and Austria. 40. Recent Music in France. 41. Recent Music in Italy. 42. Recent Music in Russia, Bohemia and Scandinavia. 43. Recent Music in England and America. Bibliographical List. Index.

MR. DICKINSON in his Preface says:—The vastness and complexity of the study of the history of music are bewildering to those who enter upon it unassisted. This volume is intended to clear the way by indicating the problems, the method and the materials. The narrative and critical portion gives a terse and comprehensive summary of music history, showing what are the important subjects involved and their connections and relations. The bibliographical sections lead the student to the best critical commentaries in the English language on every phase and detail of the subject.

"Mr. Dickinson has written a book of unquestionable value . . . . . the author's critical judgment is highly discriminating."—*Musical Standard.*

MR. ERNEST NEWMAN in the *Manchester Guardian* writes:—Mr. Dickinson has had the excellent idea of furnishing the musical student with a guide to the best literature in English upon the Art . . . . . For Mr. Dickinson's general treatment of his subject one can have nothing but praise. His method is to take each stage in the development of music separately, characterise it in a short but highly concentrated chapter and then give references to the complete English literature upon the subject. His summaries are models of sound judgment and swift statement, not more than once or twice, perhaps, could one find fault with either their completeness in every essential point or their cool and Catholic impartiality. The bibliographical guides are practically as full as they could be made. . . . . the total omissions are exceedingly trifling, while the extent and the accuracy of the information conveyed make the book indispensable to *students* and to *public libraries.*

MANUAL OF MUSICAL HISTORY. From the Epoch of Ancient Greece to our present time. By Dr. F. L. Ritter. Second Edition. Cr. 8vo, bevelled cloth, 2s. 6d.

"An agreeably and cogently written volume, dealing with a variety of topics which bear more or less directly on the history of music."—W. H. Webbe in *The Pianist's A. B. C.*

"Portable and well arranged * * * well up-to-date and contains a useful index. Students preparing for examinations will find the book distinctly serviceable."—*Teacher's Times.*

CATECHISM OF MUSICAL HISTORY AND BIOGRAPHY. By F. J. Crowest. Revised and Enlarged Edition. Tenth Thousand. 187 pp. Post 8vo, cloth, 2s. (paper, 1s.)

This work gives special attention to English musicians, and is brought down to 1905.

Musical Education says:—"An excellent little book—yet not so little since it contains an immense amount of information—historical, biographical and critical—in a very small compass."

THE STUDENT'S HISTORY OF MUSIC. History of Music, from the Christian Era to the present time. By Dr. F. L. Ritter. Third Edition. 478 pages of Letterpress and 72 Plates of Musical Illustrations. Thick crown 8vo, cloth, 7s. 6d.

"To such as are preparing for examination this valuable work must render great service."—*Christian Age.*

"A reliable guide to those students who as he says 'feel the desire, the want, of a deeper and more general knowledge of and information as to, the growth and progress of their art than is common.' That this intention has been successfully carried out in the present volume we can conscientiously affirm."—*Musical Times.*

"With the exception of Mr. Hullah's Lectures, we can recall no book in the English language of recent date which attempts to cover the same ground. Both as useful to the student as a work of reference, and as interesting and instructive to the general reader on musical subjects, this work of Professor Ritter may confidently be recommended."—*Monthly Musical Record.*

A HISTORY OF PIANOFORTE MUSIC. With Critical Estimates of its Greatest Masters and Sketches of their Lives. By John C. Fillmore. Edited with an Introductory Preface by Ridley Prentice. Crown 8vo, cloth, 3s. 6d.

Synopsis:—The Pianoforte and its Immediate Precursors (the Harpsichord and Clavichord)—Polyphonic Music (Bach, Handel, D. Scarlatti)—Homophonic Music (E. Bach, Haydn, Mozart)—The Emotional Content of Music (Beethoven)—The Classic and the Romantic in Music (Weber, Schubert, Mendelssohn, Chopin and Schumann)—Technique of the First Classical Period—Technique of the Second Classical Period—Technique of the Transition Period—Technique of the Romantic Period—Minor Composers and Virtuosi of the Different Epochs—Index.

Dudley Buck says of it:—"In my judgment the work should be in the hands of every earnest student."

"The only work of its kind in English. It groups the composers and their works into epochs and gives a clear description of the different epochs. It contains an interesting account of the lives of all the greatest composers and their works."—*Etude.*

THE RISE OF MUSIC. Being a Careful Enquiry into the Development of the Art from its Primitive Puttings forth in Egypt and Assyria to its Triumphant Consummation in Modern Effect. Especially bringing out the Influence of the Church upon the Joint Development of Harmony and Notation—the Importance of that Great Central Development the Enweavement of the Scales—the Creative Consequences of the Clavier Type of Instrument and the Explanation of a New and Perfect Order of Beauty resting upon our Tempered System. By JOSEPH GODDARD. With Illustrations of early Instruments and numerous Musical Examples drawn from Ancient and Modern Sources. With Index. Thick crown 8vo, cloth, gilt top, 7s. 6d.

It will be seen that this work is not a history of music in the ordinary sense, but rather a tracing of the organic unfolding of the musical art. At the same time it presents a perspective of both the history and constitution of music, in which history is seen to elucidate theory and theory history.

Readers will greatly appreciate the numerous musical examples culled from all sources which appear throughout the book.

"Musical enthusiasts, whom the technical language of their art does not appal, will delight in this scholarly book. Mr. Goddard's object is to show that music, commonly regarded as the youngest of the arts, had its roots in primeval man, but needed a longer time to develop into a fully constituted art than did painting and literature. It was comparatively easy for the painter to perfect his art. He had his model, Nature, always before him. The poet, in like manner, once he possessed an alphabet, had only to look around him to find the grandest subjects ready to his pen. But the musician had to discover and fix his own rules and principles, slowly revealed to him by the march of science and by chance inventions. The ancient Egyptians, for instance, used the flute, lyre and harp, but, as Mr. Goddard points out, the mass of our modern musical forms date only from the invention of the clavier type of instrument, a little over a couple of centuries ago. Modern dramatic music, too, springs as an art-form largely from the light interludes played in the Italian theatres only two centuries ago. Mr. Goddard's book is well illustrated and should find a place in many a musical home."—*The Christian World.*

AN ACCOUNT OF THE RISE OF MILITARY MUSIC IN ENGLAND and Memoirs of the Royal Artillery Band, its Origin, History and Progress. By H. G. FARMER. With 14 Illustrations. 8vo, cloth, 5s.

The Records of the R.A. Band date as far back as 1762, and its history may fairly be stated to represent the growth of the military band.

THE FIRST MUSIC PRINTED FROM ENGRAVED PLATES IN ENGLAND.

PARTHENIA Or the First Musick ever Printed for the Virginals. Composed by three famous Masters, WILLIAM BYRD, DR. JOHN BULL and ORLANDO GIBBONS. Translated into Modern Notation and Edited by E. F. RIMBAULT, LL.D., F.S.A. With Fac-similes of the original Engraved Title, showing a Lady playing the Virginals, a page of the Music, and the Curious and Interesting Dedication. Followed by the whole of the Music arranged for Playing on the Piano in the Modern Notation this forming a further 50 pages. Together with an account of the Virginals, Method of Playing, Early References, etc. By DR. RIMBAULT. This Reprint limited to 250 copies only. Folio, gilt top, rough edges, imitation old boards, cloth back lettered To Subscribers, 12s. 6d. (pub. 21s.)

The Virginal or Virginals from Henry the Seventh's time to nearly the close of the 17th century, included all quilled Keyboard instruments, the Harpsichord, Spinet, etc. Henry the Eight, according to a contemporary, played well on the Virginals. Queen Mary is said to have equalled if not surpassed Queen Elizabeth in music playing, the Regals and Lute as well as the Virginals. The first music for this tribe of instruments—including the Harpsichord—was the "Parthenia." It consists principally of "Pavans and "Galliards," in common use for dancing purposes in Queen Elizabeth's time, "Preludiums," "Fantazia of Foure Parts," etc.

The printing of music from engraved copper plates is supposed to have begun at Rome where a collection of Canzonets was engraved by Simone Verovio in 1586. In France towards the end of Louis XIV.'s reign the great house of Ballard began to make use of engraving, some of Lully's operas being printed from type and some from engraved copper plates. The Germans, of course, practised the art, one early book of Exercises being composed and engraved by the great John Sebastian Bach himself. In England "Parthenia" was the first produced, appearing in 1611.

Virdung in 1511 is the oldest authority mentioning the virginals, but Rimbault quotes the following proverb that was formerly inscribed on a wall of the Manor House of Leckingfield, Yorkshire, and if, as thought to be, as old as the time of Henry the Seventh (1485 1509) contains a reference earlier than Virdung:

"A Slac Stryngc in a Virginall soundithe not aright,
It doth abide no wrestinge it is so loose and light;
The sound board crasede, forsith the instrumente,
Throw misgovernance to make notes which was not his intente."

THE PAST AND THE FUTURE. Inaugural Lecture at Gresham College, Nov., 1890. By J. FREDERICK BRIDGE. Mus. Doc. Crown 8vo. sewed. 6d.

THE WORLD'S EARLIEST MUSIC. Traced to its Beginnings in Ancient lands. By collected Evidences of Relics, Records, History and Musical Instruments, from Greece, Etruria, Egypt, China, through Assyria and Babylonia to the Primitive Home, the Land of Akkad and Sumer. By HERMANN SMITH. With 65 full page Illustrations and Cuts, nearly 400 pp. Crown 8vo, cloth, 6s.

"I return the sheets you entrusted to me of 'The World's Earliest Music.' There is nothing I could criticize in those interesting pages."—A. J. HIPKINS in a letter to the Author.

"Should be in the hands of every musician. . . . . Most interesting is his Chapter upon the music of Japan."—*Pall Mall Gazette.*

"Technically though it occasionally must be, the book is one which should charm all music lovers."—*Morning Leader.*

"The book, which is profusely illustrated, is most interesting, and is, in its handsome cloth binding, well worth its published price, 6/-"—*The Musical Star.*

"I confess to a very considerable ignorance, natural and acquired, of the ancient instruments; but it seems to me that Mr. Smith has got as near the truth as a twentieth-century mortal can."—J. F. RUNCIMAN in *The Saturday Review.*

"It is a pleasantly written volume dealing with the earliest conditions of music in ancient lands. From rock carvings, wall paintings, tablets and vases, sculptures, papyri and so forth, Mr. Smith has drawn the materials for a volume which has involved an immense amount of research and contains a vast quantity of information conveyed in a very lucid and readable manner."—H. A. SCOTT in *The Academy.*

"No more enthusiastic worker, nor patient student, exists than Mr Hermann Smith. The structure, character and capabilities of every kind of musical instrument have been the objects of his study for many years. To an intense love of his subjects he adds *an attractive style.* . . . The liking of the ear in music is a liking by inheritance, transmitted as a facial type is. This view is new, etc."—*Birmingham Daily Post.*

ORCHESTRAL.

THE INSTRUMENTS OF THE MODERN ORCHESTRA AND EARLY RECORDS OF THE PRECURSORS OF THE VIOLIN FAMILY. With over 500 Illustrations and Plates. By KATHLEEN SCHLESINGER. Two volumes, thick 8vo, cloth. *Ready* 1910.

Vol. I. Modern Orchestral Instruments.

Vol. II. Researches into and Records of the Remote Origin of the Violin Family. A Bibliography of Music and Archæology (English and Foreign) and copious Indices of the two volumes.

The first volume deals with the instruments of the modern orchestra on a uniform plan, the necessary practical information being systematically arranged for each member without unnecessary technicalities, under the headings of Construction, Production of Sound, Compass, Quality of Tone, Possibilities, Origin, accompanied in each case by at least one illustration.

The second volume is an excursion into the domain of archæology in quest of the remote origin of the violin family. The result of the magnificent work done by the various archæological societies in exploring and excavating the centres of the more ancient Oriental civilisations renders it necessary to reconsider the history of European music and musical instruments.

This the author has done, and the conclusions arrived at are naturally in advance of all previous authorities.

The copious Bibliography which is found at the end of the second volume has been compiled with the hope that it may prove suggestive to those engaged in original archæological research. Titles of certain works containing no illustrations of musical instruments have been indicated where this deficiency is counterbalanced by valuable references.

The author is indebted to the following, whom, in many ways, have aided and encouraged her during the many years of laborious study and research, to the late A. J. Hipkins, to Messrs. Victor Mahillon, Arthur Hill, R. J. White, H. Grice, Algernon Rose, A. C. White, to Miss Bryant and Miss Mabel Goschen (Mrs. Gerard Cobb) for giftc or loans of photographs or drawings for the purposes of illustration, to the late Sir Thomas Brooke, to Professors Flinders Petrie and John Garstang, Messrs. O. M. Dalton, Ernest Leroux, Paul Dugardin, Heron de Villefosse, to the Rev Dr. Sinker (Trin. Coll., Cambridge) and the Rev. Père Delattre (Carthage), to Dr. Füh (St. Gallen), Herr W. Heckel (Biebrich-am-Rheim), Victor Mahillon, Herr Ludwig Schweisgut (of Carlsruhe), the late Dr. Stelzner, Messrs. Hawkes and Son, Rudall Carte and Co., Joseph Wallis and Co., Besson and Co., Boosey and Co., Köhler and Co., Hart and Son, Metzler and Co., Erard and Son, Broadwood and Son, Steinway and Co., Bechstein and Co., Pleyel, Wolff and Co., G. Potter and Co. (Aldershot), Novello and Co., Beare and Son.

ON CONDUCTING. By Richard Wagner. Translated by E. Dannreuther. Second Edition, cr. 8vo, cloth, 5s.

A Treatise on Style in the Execution of Classical Music, written by a practical master of the grand style.

Weingartner, speaking of this celebrated work, says :—" Wagner's book laid the foundation for a new understanding of the function of the conductor, in whom we now recognise, not only the eternal factor that holds together an orchestral, choral or operatic performance, but above all the spiritualising internal factor that gives the performance its very soul."

Grove's Dictionary says : " One of the finest of his minor publications, and to a professional musician perhaps the most instructive. A Treatise on *Style*, giving his views as to the true way of rendering classical music, with minute directions how to do it and how not to do it, together with many examples in musical type from the instrumental works of Beethoven, Weber, Mozart, etc."

NOTES ON CONDUCTING AND CONDUCTORS. By T. R. Croger, F.R.G.S., F.Z.S., also the Organising and Conducting of Amateur Orchestras, with three full-page Illustrations of the Various "Beats" and Plan of the Orchestra. Third Edition, Revised and Enlarged. Crown 8vo, cloth, 2s. (paper, 1s.)

" A mine of good things."—*Musical Opinion.*

" One of the best guides to conducting."—*Music Trades Review.*

" A capital little book brightly written and full not only of entertaining and racily-told anecdotes, but also of clear and sensibly-expressed opinions on musical matters."—*The Stage.*

" The book appeals particularly to conductors of provincial societies, whether instrumental or choral; it is written in a pleasant style, and is full of practical hints by one who knows his subject well."—*Monthly Musical Record.*

" Many practical hints on the organizing and conducting of amateur orchestras and choral societies."—*Morning Post.*

HOW TO PLAY FROM SCORE. Treatise on Accompaniment from Score on the Organ or Pianoforte. By F. Fetis. Translated by A. Whittingham. With 40 pages of Musical Examples. Crown 8vo, bevelled cloth, 3s. 6d.

Contents :—Introduction. 1. On the Different Arrangements of Voices and Instruments in Scores (Partitions). 2. On Vocal Parts; Instrumental Parts, their Fixed Pitch and the Manner in which they are Written. 3. Concerning the Manner in which the Accompanist should Read a Score in order to grasp its Substance and its Details. 4. The Mechanism of Accompaniment. 5. Concerning the Influence of the Accompanist on the Vocalist. 6. On Difference of Style. 7. On the Accompaniment of Early Music without Orchestra, the Duets and Trios of Clari, Durante, Handel and the Psalms of Marcello. 8. On the Reproduction of Ancient Orchestral Accompaniments. 9. On the Modern Style of Accompaniment. 10. On Mozart, Cherubini, Mehul, Spontini, Rossini and the Modern School. 11. Conclusion.

This popular and useful book might have been entitled " The Art of Making Arrangements for the Organ or Pianoforte from Full Orchestral and other Scores." It contains all that is necessary to know upon this subject.

ORGAN.

THE ORGAN FIFTY YEARS HENCE. A Study of its Development in the Light of its Past History and Present Tendencies. By FRANCIS BURGESS, *F.S.A., Scot.* 8vo, 1s. net.

"All organists should read Mr. Francis Burgess' lecture on 'The Organ Fifty Years Hence.' We have every sympathy for the opinions Mr. Burgess expresses, though we have our doubts as to whether the unpopularity of electric action is not fully justified, etc."—*The Church Union Gazette.*

"Gives us an excellent summary of what has been and is being done towards improvement in organ construction and tone, and his criticisms are always sound and convincing."—*Glasgow Herald.*

A PRACTICAL TREATISE ON ORGAN BUILDING. By F. E. ROBERTSON. With Working Drawings and Appendices for ready calculation of all parts. Text in one vol. Demy 8vo, and numerous plates in a royal 4to vol. 2 volumes, 31s. 6d. net.

"Many books upon Organ Building have been published in recent years, but for fulness of information not one approaches Mr. Robertson's work, wherein practical details and directions are given in every department of Organ construction. The book is of course based upon old Don Bedos' famous work, and contains the most valuable portion of Dr. Topfer's German treatise, together with his learned diagrams and illustrations."—HERMANN SMITH'S "The Making of Sound In the Organ and In the Orchestra." W. Reeves.

MODERN ORGAN TUNING, The How and Why, Clearly Explaining the Nature of the Organ Pipe and the System of Equal Temperament, Together with an Historic Record of the Evolution of the Diatonic Scale from the Greek Tetrachord. By HERMANN SMITH. Crown 8vo, cloth, 3s. 6d.

"The greatest authority on acoustical matters connected with organ pipes who has ever lived."—G. A. AUDSLEY in his *Art of Organ Building.*

"I have read 'Modern Organ Tuning' with great interest. It is a book of value and should find appreciative readers. It should be a handbook with students of the organ and organ tuning."—A. J. HIPKINS.

"Simple non-technical terms sets out with an attractiveness and lucidity I have never seen surpassed the history of the evolution of the diatonic scale from the Greek tetrachord * * * by no means intended for organ students alone * * the historical explanations add to the fascination of this volume."—*Daily Telegraph.*

"The book is just such another as its author's similar manual on the tuning of pianos, a workmanlike handbook; full of sound practical advice for the craftsmen concerned."—*Scotsman.*

"Recommended to the notice of organists with the fullest confidence that they would derive both pleasure and profit from its perusal."—*Scottish Guardian.*

RINK'S PRACTICAL ORGAN SCHOOL: A New Edition. Carefully Revised. The Pedal Part printed on a Separate Staff, and the Preface, Remarks and Technical Terms translated from the German expressly for this Edition by John Hiles. The Six Books Complete, handsomely bound in red cloth, gilt edges, ob. folio, 10s. 6d. net (issued at 20s.), or the six parts 7s. 6d. net (issued at 6s. each.)

The best edition ever published of this Grand Classical work. No other edition will bear comparison with it for care and skill in editing, nor for beauty of engraving and excellence of printing. One special merit of this edition is that the *bar lines* are bold, and that they are drawn *right through the score*, instead of through each staff, as was the custom in days gone by. The student who will take the trouble to test this edition against any other, will at once perceive the advantage he gains from this clear and distinct style of "barring"; to an advanced performer the matter may be perhaps of less importance, but even he cannot fail to appreciate the comfort of increased legibility.

As a royal road to thorough and sound Organ Playing in all styles, there is no other School which will bear comparison with this: a Beginner can follow no better course than to go through it slowly.

A SHORT HISTORY OF THE ORGAN, Organists, and Services of the Chapel of Alleyn's College, Dulwich. With Extracts from the Diary of the Founder. By W. H. Stocks. Crown 8vo, sewed, 1s.

THE EARLY ENGLISH ORGAN BUILDERS and their Works, from the 15th Century to the Period of the Great Rebellion. An Unwritten Chapter on the History of the Organ. By Dr. E. F. Rimbault. Well printed. With woodcuts, post 8vo, cloth, 3s. 6d.

ANALYSIS OF MENDELSSOHN'S ORGAN WORKS. A Study of their Structural Features. For the Use of Students. By Joseph W. G. Hathaway, Mus. B. Oxon., 127 Musical Examples. Portrait and Facsimiles. Crown 8vo, bevelled cloth, 4s. 6d.

THE MAKING OF SOUND IN THE ORGAN AND IN THE ORCHESTRA. With many illustrations. By Hermann Smith. Crown 8vo, cloth, 7s. 6d. *In the Press.*

Highly recommended by the late A. J. Hipkins.

ORGANIST'S QUARTERLY JOURNAL of Original Compositions. Edited by Dr. W. Spark, 5s. per part. New Series Volume, 160 large pages, oblong folio, bound in cloth, 18s.

THE ORGAN PARTS OF MENDELSSOHN'S ORATORIOS AND OTHER CHORAL WORKS. Analytically Considered. By Orlando A. Mansfield, *Mus. Doc., F.R.C.O.* With numerous Musical Examples. Crown 8vo, cloth, 4s. 6d.

HENRY SMART'S ORGAN COMPOSITIONS ANALYSED. By J. Broadhouse. Crown 8vo, bevelled cloth, 2s. 6d.

THE INFLUENCE OF THE ORGAN IN HISTORY. By Dudley Buck. New Edition with Illustrations. Crown 8vo, sewed, 1s. net.

THE PEDAL ORGAN: Its History, Design and Construction. By T. Casson. With Folding Plate. 8vo, sewed, 1s. net.

CATECHISM for the Harmonium and American Organ. By John Hiles. Post 8vo, sewed, 1s.

REFORM IN ORGAN BUILDING. By Thomas Casson. Crown 8vo, sewed, 6d.

THE MUSICAL STANDARD. A Weekly Newspaper for Musicians, Professional and Amateur. Established nearly Half a Century. The Organ of no *Clique*. Independent Criticisms. Correspondents in all Parts of the World. Translations of Important Articles from the foreign musical press. Illustrated Supplement *every week*. "The Violin and String World" given with the first number of each month. Price Twopence (by post, 2½d.) Annual Subscription 10s. 10d., 6 months 5s. 5d., 3 months 2s. 9d. (Abroad, 12 months 13s., 6 months 6s. 6d.) Terms for Advertisements on application to the Manager. Cases for binding 1s. 6d. net (by post, 1s. 9d.)

Portraits of celebrated musicians are given from time to time in "The Musical Standard." Price 2d. each. List of Portraits that have already appeared sent post free on application.

PIANOFORTE.

REEVES' VAMPING TUTOR. Art of Extemporaneous Accompaniment, or Playing by Ear on the Pianoforte, Rapidly Enabling anyone having an Ear for Music (with or without any knowledge of Musical Notation) to Accompany with Equal Facility in any Key with Practical Examples. By FRANCIS TAYLOR. New Edition, to which is added Instructions for Accompaniment with Equal Facility in every Key illustrated by Examples. Folio, 2s.

PIANOFORTE TEACHER'S GUIDE. By L. PLAIDY. Translated by FANNY RAYMOND RITTER. Crown 8vo, boards, 1s.

"Evidently written by a pianist who is a thorough master of his instrument as well as a good teacher."—*Educational Times.*

"Some of the finest pianists of the day owe much of their technical facility to Plaidy's excellent method."—*Bazaar.*

"The best possible advice of a veteran; no teacher can read it without benefit. Affixed is a list of studies in order of difficulty. This is especially valuable."—*Schoolmaster.*

THE ART OF TUNING THE PIANOFORTE, A New and Comprehensive Treatise to Enable the Musician to Tune his Pianoforte upon the System founded on the Theory of Equal Temperament. By HERMANN SMITH. Crown 8vo, limp cloth, New Edition, thoroughly Revised, 2s.

Readers will welcome this note of approval signed by A. J. Hipkins, a name long associated with the Pianoforte and familiar to most musicians in the musical literature of the present time. No better voucher could be desired of the fair claims of this little book upon the reader's attention and confidence. "I have had the privilege of reading the proofs of Mr. Hermann Smith's clear and exhaustive treatise on Pianoforte Tuning, and I am satisfied that for the professional tuner, or the amateur who desires to understand the subject and put the knowledge he acquires into practice, there is no book upon it yet published that may be compared with it. I recommend all tuners or would-be tuners to study this unpretending and excellent work, wherein the theory is laid down in clear and correct terms, and the practice, as far as this is possible, is indicated judiciously."

THE DEPPE FINGER EXERCISES for Rapidly Developing an Artistic Touch in Pianoforte Playing, carefully Arranged, Classified and Explained by AMY FAY (Pupil of Tausig, Kullak, Liszt and Deppe). Folio, English Fingering, 1s. 6d. (Continental Fingering, 1s. 6d.)

The *Musical Times* says:—We are asked by a well-known pianist to say that Herr Emil Sauer was trained up to his seventeenth year on the Deppe system and that he owes his wonderful technique almost solely to that method * * * Our correspondent adds that Herr Sauer speaks as enthusiastically of the Deppe method as did Miss Amy Fay.

PIANO TOUCH, PHRASING AND INTERPRETATION. By J. ALFRED JOHNSTONE (*author of* "The Art of Teaching Expression in Piano Playing," etc.) Crown 8vo, cloth, 3s. 6d.

CONTENTS:—I. TOUCH IN PIANO-PLAYING AND SOME OF ITS CURIOSITIES. Varied Meanings of the Word "Touch"—"Touch" as Applied to the Instrument—Limitations of "Touch"—Possibilities of "Touch"—Confused Ideas on "Touch"—Tone-Colour—Causes of Confused Ideas—"Touch" as Applied to the General Effect produced by the Player—Objective Results of Subjective Desires. Melody-Playing—Diverse Kinds of "Touch"—Brilliant Legato Passage "Touch"—Two Broad Varieties or Schools of "Touch"—Recommendation of Lucidity. II. ON THE MYSTERY OF PHRASING IN PIANO-PLAYING. The Cant of Phrasing—What is Phrasing?—Clear Perception of the Formal Divisions of Music—The Foundation of Phrasing—Erroneous Notion of Bar to Bar Construction—Appeal made Effective by Intelligible Illustrations—The Right Method of Making Phrase Divisions Clear in Piano-Playing—Motival Phrasing—Expressive Treatment of Phrases. III. HINTS ON THE RIGHT INTERPRETATION OF BACH'S WOLTEMPIRIRTE-CLAVIER ON THE PIANO. Eulogiums of Eminent Musicians—Bach's Conflicting Interpreters—The Simple Rule of the Trusting Disciple—Subjects of Conflicting Opinion—The Text—Interpretation—Clavichord or Harpsichord—Bach's Clavichord Playing—Emotional Element in Bach's Fugues—Clavichord or Piano Interpretation—How to Interpret Polyphonic Music on the Piano—Interpretation Regarded from the Standpoint of Style—Analysis of the Right Foundations for Phrasing—Tempo—Legato; Staccato; Use of Pedal; Time Variations—Interpretation of Bach's Ornaments—Conclusion. IV. EDUCATIONAL EDITIONS OF PIANO CLASSICS. Modern Educational Progress in Music—Some Uses of Good Annotated Editions—Objections to Annotated Editions—Comparative Rank of Piano Classics—Editions of Bach's Woltempirirte-Clavier—Editions of Beethoven's Sonatas—Editions of Chopin's Works—Editions of Mozart, Haydn, Schumann, Mendelssohn—Curiosities of Doctrine on Piano Touch.

How Bach's Fugues should be rightly interpreted on the piano is one which is still at issue. The various opinions on the subject already set forth are here examined, and practical suggestions are made on many aspects of this most interesting question.

"We can unreservedly recommend this book to all musical people who are pianists."—*Cheltenham Examiner.*

"This is a book of rare educational excellence—the work of an expert of acknowledged standing and experience, who possesses not only a very complete knowledge of his subject, but also the faculty of expressing himself in clear and unmistakable terms."—*Aberdeen Daily Journal.*

"Valuable hints on phrasing."—*Freeman's Journal.*

"A thoughtful and instructive discussion of many vexed questions of musical taste and particularly of musical execution, with a special reference to the inner mysteries whereby the piano is made to talk to you."—*Scotsman.*

"Without any difficulty, the author disposes of most of the cant about touch' and shows that the so-called *mystery* is only a matter of proper *technique*. Willingly would I quote from the text, only I think it better for the reader to get the book and go through it quietly, marking his favourite passages for future reference."—*The Musical Star.*

"The aid he gives to the student in search of the best annotated editions of works is invaluable."—*Sheffield Daily Independent.*

"Deals at some length with the technique of pianoforte-playing."—*Yorkshire Post.*

A HANDBOOK TO CHOPIN'S WORKS. Giving a Detailed Account of all the Compositions of Chopin. Short Analyses for the Piano Student and Critical Quotations from the Writings of Well-Known Musical Authors. By G. C. Ashton Jonson. The Whole Forming a Complete Guide for Concert-Goers, Pianists and Pianola-Players, also a Short Biography, Critical Bibliography and a Chronological List of Works, etc. Crown 8vo, cloth, gilt top, 6s.

Will be found equally useful and helpful to concert-goers, for whom it forms a permanent analytical programme, to pianists, and to those amateurs of music who can now, owing to the pianola, pursue for the first time a systematic and co-ordinated study of Chopin's works, a delight hitherto denied to them owing to their inability to read or play the more difficult compositions.

"Here in one compact volume, is all that it is necessary to know about Chopin and his works except by the leisured enthusiast * * * Each separate opus is placed in its proper sequence, and attached to them are brief extracts, again from very many writings, together with Mr. Ashton Jonson's own lucid criticisms. The task is well done; nothing has apparently been left out that ought to have been put in, and never once can our author be accused of being tedious. The book should be greatly studied by all."—*Daily Chronicle.*

"We would go further and welcome this carefully compiled handbook in the interests of all musicians."—*Daily Telegraph.*

"It is obvious to us that Mr. Jonson has done exceedingly well, and it is to be hoped that the many lovers of Chopin will reward his labours by purchasing his clever, eminently practical and highly interesting and instructive handbook."—*Musical Standard.*

"A most useful addition to Chopin literature in the English language." —*Musical Times.*

"A volume full of interest and instruction, even for those who think they know their Chopin well already."—*Truth.*

In the Press.

THE ART OF TEACHING. By J. Alfred Johnstone. Crown 8vo, cloth.

THE NATIONAL MUSIC OF THE WORLD. By H. F. Chorley. Edited by H. G. Hewlett. Contains many Musical Illustrations. New Edition with Index. Crown 8vo, cloth, 6s. 1910

The subject matter of the above volume is treated of under the divisions of Music from the East, Music from the South, Music from the North, and Music from the West.

TECHNICAL STUDY IN THE ART OF PIANOFORTE PLAYING (Deppe's Principles). By C. A. EHRENFECHTER. With numerous Illustrations. Fourth Edition. Crown 8vo, bevelled cloth, 2s. 6d.

CONTENTS:—Position—Arm—Wrist—Fingers; Touch (Tone Production); Legato; Equality of Tone; Tension and Contraction; Five Finger Exercises; Skips; The Scale; Arpeggio Chords; Firm Chords; High Raising of the Arm; Melody and its Accompaniment; Connection of Firm Chords; The Tremolo; The Shake (Trill); The Pedal; Fingering.

A detailed and exhaustive exposition of Deppe's principles of the Pianoforte technic in all its features, notably with regard to touch and passage playing, showing the immense advantage to be gained by their application, from the elementary to the higher stages of technical development.

A piano-student writes:—"Most useful. I am always re reading and studying it. It has helped me a lot."

A professional musician who studied after this method, writes in an issue of the *Musical Standard* as follows:—"I am sure many must have felt with me that the old system of teaching was useless for the production of a technique fit to grapple with the appalling difficulties of much of the music of the modern romantic school of composers. Let all whom are ambitious to overcome such difficulties attack them on the lines laid down by C. A. Ehrenfechter, and I am convinced they will find, as I have done, their desires realised in a most astonishing manner."

DELIVERY IN THE ART OF PIANOFORTE PLAYING, On Rhythm, Measure, Phrasing, Tempo. By C. A. EHRENFECHTER. Crown 8vo, bevelled cloth, 2s.

"Deals with rhythm, measure, phrasing and *tempo* as applied to pianoforte playing * * explains the difference between the *subjective* and *objective* in delivery and expresses his opinion that a performance of the *born* artist must of necessity be subjective, while the wavering, undecided, and uninspired amateur will be safest in giving an altogether objective rendering. The section with reference to accent is particularly good. There are numerous illustrations from the works of the masters."—W. H. WEBBE in *The Pianist's A. B. C.*

PIANO TEACHING. Advice to Pupils and Young Teachers. By F. LE COUPPEY (Prof. in the Conservatory of Music, Paris, etc.) Translated from the Third French Edition by M. A. BIERSTADT. Post 8vo, cloth, 2s.

"Well worthy of perusal both by young teachers and pupils. The book contains sound advice, particularly applicable to the study of Pianoforte playing."—W. H. WEBBE in *The Pianist's A. B. C.*

AN ESSAY on the Theory and Practice of Tuning in General, and on Schiebler's Invention of Tuning Pianofortes and Organs by the Metronome in Particular. Translated by A. WEHRHAN. Crown 8vo, sewed, 1s.

PRACTICE REGISTER for Pupil's Daily Practice. A Specimen, 1d., or 1s. per 100.

WELL-KNOWN PIANO SOLOS. How to Play them with Understanding, Expression and Effect. By Charles W. Wilkinson. *First Series.* Containing 26 Articles dealing with the Works of Sinding, Scarlatti, Paderewski, Handel, Rubinstein, Scharwenka, Schumann, Godard, Delibes, etc. Crown 8vo, 1s.

Second and Third Series. Uniform with above. Each dealing with twenty-six various pieces. 1s. each.

Contents of the First Series:—Sinding, Rustle of Spring. Scarlatti, Pastorale e Capriccio. Paderewski, Minuet in G. Handel, Harmonious Blacksmith. Rubinstein, Melody in F. Scharwenka, Polish Dance. Schumann, Nachtstücke. Godard, Mazurka. Delibes, Pizzicati from Sylvia. Grieg, Wedding Day at Troldhangen. Elgar, Salut d'Amour. Paderewski, Melodie. Raff, La Fileuse. Tchaikovsky, Troika. Godard, Berger et Bergères. Chaminade, Pierrette. Moszkowski, Etincelles. Paderewski, Minuet in A Major. Grieg, Norwegian Bridal Procession. Liszt, Regata Veneziana. Chaminade, Automne. Moszkowski, Serenata. Lack, Valse Arabesque. Schumann, Arabeske. Chopin, Etude in G Flat. Durand, First Valse.

Draws one's attention to the beauties in a piece, explains difficulties here and there, draws attention to a pedal effect and any peculiarity of fingering, and generally gives all the information a professor is expected to give to his pupils.

"Described in detail in a manner to be understood by the youngest student, and with a charm that must ensure the popularity of the book."—*Aberdeen Daily Journal.*

TECHNICAL AND THEORETICAL.

HOW TO HARMONIZE MELODIES. With Hints on Writing for Strings and Pianoforte Accompaniments. By J. Henry Bridger, *Mus.Bac.* With Musical Examples throughout. Crown 8vo, cloth, 2s. 6d.

The above work deals with a branch of the subject of Harmony which in the past received but scant consideration in the standard treatises; and though of late years works have appeared dealing more or less fully with the subject, there are some points which, as the result of many years' teaching experience, the author considers require to be treated in greater detail to afford the students the necessary guidance; such, for example, as the treatment of the cadences and of accidentals. The present work is an attempt to supply this, and is almost entirely practical.

Chapters: Method of Study—Cadences and Analysis of Melodies—Final Cadences—Middle Cadences—Harmonization with Primary Chords—Dominant Seventh and Secondary Chords—Use of other Diatonic Discords—Florid Melodies—Accidentals, Modulation and Chromatic Chords—Harmonization in Three and Five Parts—Part-Writing for Strings—Adding Free Accompaniments.

EXERCISES IN VOCAL SCORE READING. Collected from the Works of Orlando di Lasso, Palestrina, Vittoria, Barcroft, Redford, Peter Certon, Byrd, Gibbons, Croft, Rogers, Boyce, etc. For Students preparing for the R.C.O. and other Examinations. By James Lyon, *Mus.Doc. Oxon.* 4to, paper covers, 3s.

Although there are books on vocal score reading in existence, the author has found the exercises contained in this book—*taken from the works of writers of the early contrapuntal school*—of the greatest possible value in his private teaching, and he ventures to think that students preparing for diplomas where vocal score reading is required, will welcome such a collection as this

EXERCISES IN FIGURED BASS AND MELODY HARMONIZATION. By Dr. James Lyon. 4to, paper covers, 2s.

THE RUDIMENTS OF GREGORIAN MUSIC. By Francis Burgess, *F.S.A., Scot.* Crown 8vo, 6d.

Plainsong or Gregorian Music, is the generic name given to that great system of ecclesiastical melody formulated by the primitive Church and retained in later ages as the official chant for use during the most solemn acts of Christian worship. As a system it represents the accumulated knowledge of several centuries usually accounted great by those who respect tradition and whilst its peculiar and characteristic solemnity marks it out as an ideal form of sacred music which the modern composer may study with profit.

"An entertaining and instructive brochure."—*Burton Daily Mail.*

"A very clear and concise treatise."—*Liverpool Daily Post.*

HOW TO COMPOSE. A Practical Guide to the Composition of all Works within the Lyric Form, and which include the Valse, Gavotte, Mazurka, Polonaise, March, Minuet, and all Ordinary Dance Forms; as also the Nocturne, Impromptu, Berceuse, Reverie and Similar Characteristic Pieces. By EDWIN EVANS, SENIOR, *F.R.C.O.* (*author of* "The Relation of Tchaïkovsky to Art-Questions of the Day," "A Handbook to Brahms' Works," "The Modal Accompaniment to Plain Chant," etc.). With 60 Musical Examples. Crown 8vo, cloth, 2s. 6d. (paper, 1s. 6d. net).

This work is a store of the most valuable and practical musical knowledge, so condensed as to be of immense utility for its purpose.

The plan adopted is that of gradually developing a full composition under the reader's own observation; and of explaining to him every feature as it occurs in such plain terms that the merest average musical knowledge is alone required for its comprehension. The principles of this little book are in complete accord with those of the very highest authorities; and full indices have been provided in order to bring every fact of its contents within instant reach. Independently of composition it is of special interest to the general reader; whilst to the musician and student it is invaluable. This work is based upon the analogy of the above to lyrical poetry; advantage being taken of the reader's knowledge of the latter.

"A daring subject to tackle, and one that in most cases would be better left alone. We must confess that we opened the book feeling very sceptical; but the author—who is well known as one of the most thoughtful of our musical *litterateurs*—has handled his subject in a manner that compels our admiration. To the young musician who feels that he has something to say, we strongly advise the immediate purchase of this thoughtful and distinctly practical treatise. It will save him from that loose, meandering, formless music so characteristic, unfortunately, of many of the early works of our young composers."—*Aberdeen Daily Journal.*

PRONOUNCING DICTIONARY OF MUSICAL TERMS. By DR. DUDLEY BUCK. Sixth Edition, with the Pronunciation of each Term accurately given. Edited and Revised by A. WHITTINGHAM. Crown 8vo, cloth, 1s. (paper, 6d.)

A most valuable and useful little book to all musical people. The method adopted for giving the correct pronunciation of each term is most concise and clear.

HARMONY, EASILY AND PROGRESSIVELY ARRANGED. Presenting in a Simple Manner the Elementary Ideas as well as the Introduction to the Study of Harmony. With about 300 Musical Examples and Exercises. By PAUL COLBERG. Crown 8vo, cloth, 2s. (paper, 1s.)

August Wilhelmj says:—"This work is distinguished by brevity and clearness I most warmly recommend it."

EXAMPLES OF FOUR PART WRITING FROM FIGURED BASSES AND GIVEN MELODIES. 4to, paper covers, 4s.

These exercises are printed in open score so as to be of use in score reading tests. This volume forms a key to "Exercises in Figured Bass" by the same author.

THE ART OF MODULATION. A Hand-book Showing at a Glance the Modulations from one Key to any Other in the Octave, consisting of 1,008 Modulations. For the Use of Organists and Musical Directors. Edited by CARLI ZOELLER. Third Edition. Roy. 8vo, cloth, 4s. (paper, 2s. 6d.)

THE STUDENT'S HELMHOLTZ. Musical Acoustics or the Phenomena of Sound as Connected with Music. By JOHN BROADHOUSE. With more than 100 Illustrations. Fourth Edition. Crown 8vo, cloth, 7s. 6d.

"In his Preface the author says:—'The object of the present book is to give, in one volume, a good general view of the subject to those who can neither spare time to read, nor money to buy a number of large and expensive works.' A perusal of the book justifies us in asserting that this design is most satisfactorily carried out; and it is not too much to say that although the plan of the work excludes the possibility of minutely dissecting every subject treated upon, any careful reader may obtain so clear an insight into the principle of acoustics, as to enable him not only to pass an examination but to store up a large amount of general knowledge upon the phenomena of sound."—*Musical Times.*

"The Student's Helmholtz will be very useful to many musicians, to whom much in Helmholtz's work must appear obscure. I shall recommend the book whenever an opportunity offers itself."—DR. RITTER.

This work has been specially designed for musical students preparing for examination.

EXERCISES ON GENERAL ELEMENTARY MUSIC. A Book for Beginners. By K. PAIGE. Fourth Edition, Part I. Price 9d. Part II., price 1s. Crown 8vo, sewed (2 parts complete in cloth, 2s. 4d.)

CONTENTS of PART I.—1. Pitch. 2. Length of Sounds. 3. Time. 4. Time and Accent. 5. Intervals. 6. Scales. 7. Transposition. 8. Syncopation. 9. Signs and Abbreviations. 10. Notation. 11. Miscellaneous Questions and Exercises.

CONTENTS of PART II.—1. Triads. 2. First Inversion of a Triad. 3. Second Inversion of a Triad. 4. Dissonances. 5. Suspensions. 6. Sequences. 7. Cadences. 8. Dominant Sevenths, etc., etc.

"We have much praise not only for the general arrangement of the book, but for the lucid manner in which the questions are put. The Chapters on Time and Accent are exceedingly good, and there are some useful exercises to accustom the pupil to transposition. We are especially pleased, too, with the method of writing incomplete bars, and asking the pupil to supply the missing parts with rests: also of requiring notes to be changed into rests and rests into notes."—*Musical Times.*

ELEMENTARY MUSIC. A Book for Beginners. By Dr. Westbrook. With Questions and Vocal Exercises. Thirteenth Edition. Crown 8vo, cloth, 1s. 6d. (paper, 1s.)

Contents:—1. The Staff and its Clefs. 2. Notes and their Rests. 3. Bars and Time. 4. Accidentals. 5. Keys and Scales. 6. Intervals. 7. Musical Pitch. 8. Accent. 9. Secondary Signs. 10. Ornaments and Groups of Notes. 11. Voices and Scores. 12. Church Modes. 13. Italian and other Directions. 14. Foreign Note-Names. 15. Questions. 16. Vocal Exercises

"His explanations are extremely clear. The questions at the end will be found very useful."—*Musical Times.*

"This little primer is one of the best of its kind, and forms an admirable course of preparation for the local examinations in music * * * * it ensures, as far as a book can, an intelligent and thorough grasp of the elements of musical knowledge. The questions at the end of the book will be found invaluable to teachers."—*Journal of Trinity College, London.*

HOW TO MEMORIZE MUSIC. By C. F. Kenyon. With numerous Musical Examples. Crown 8vo, cloth, 2s. (paper, 1s.)

"Mr. Kenyon proves himself an excellent guide; and indeed we know of no other work devoted to the subject with which he has dealt so thoroughly and so successfully."—*Glasgow Herald.*

"Points out the paramount importance of being able to play from memory. Many useful hints are given on the course of study to be adopted."—*Morning Post.*

"A most valuable little book of eight chapters, containing valuable information on the art of memorising, with many illustrations."—*Western Morning News.*

"May do much good inducing young pianists to exert their brains together with their fingers."—*Yorkshire Post.*

HARMONY AND THE CLASSIFICATION OF CHORDS. With Questions and Exercises. By Dr. J. H. Lewis. Vol. 1, 8vo, boards, cloth back, 5s.

——— *Ditto*, Vol. 2. 8vo, boards, cloth back, 5s.

COUNTERPOINT: A Simple and Intelligible Treatise. Containing the most Important Rules of all Text Books, in Catechetical Form; (Forming an Answer to the Question "What is Counterpoint?") Intended for Beginners. By A. Livingstone Hirst. Crown 8vo, sewed, 9d.

THE ART OF MODULATION. A Hand-book showing Glance the Modulations from one Key to any Other in the Octave, consisting of 1,008 Modulations. For the Use of Organists and Musical Directors. Edited by Carli Zoeller. Third Edition. Roy. 8vo, cloth, 4s. (paper, 2s. 6d.)

THE HARMONISING OF MELODIES. A Text-Book for Students and Beginners. By H. C. BANISTER. Third Edition, with numerous Musical Examples. Crown 8vo, limp cloth, 2s.

CHAPTERS:—Introductory, The Resources of Harmony; Harmonising with Common Chords Only, General Principles; Couplets of Common Chords; Plan, Rhythmical Structure, Phrases, Cadences; Cadences in Connection with Modulation, Melodies in the Minor Mode; Continuity, Congruity with Words; Illustrations of Harmonising the same Melody in Different Ways with Changed Mode; Florid Melodies, Unessential Notes, Different Forms of Harmonising; Pianoforte Accompaniment to a Melody; Arpeggio Accompaniment; Accidentals and Chromatic Passing Notes, A Caution, Summary.

MUSICAL SHORTHAND for Composers, Students of Harmony, Counterpoint, etc., can be Written very Rapidly and is more Legible than printed Music, with Specimens from Bach, Handel, Chopin, Wagner, Mendelssohn, Spohr, Mozart, etc. By FRANCIS TAYLOR, 14 pages, 12mo, sewed, 6d.

"Composers and Students of Music expend a vast amount of time in mere painful mechanism." We have only six totally unlike signs. These from their simplicity can be written with great rapidity, one dip of the pen sufficing for an entire page, and the writing being as legible as possible.—*Preface.*

TRANSPOSITION AT SIGHT. For Students of the Organ and Pianoforte. By H. ERNST NICHOL. Third Edition, with numerous Musical Exercises. Crown 8vo, cloth, 1s. 6d. (paper, 1s.)

There is no need to dwell upon the usefulness or even the necessity of transposition to the organist or the accompanist of songs. The practice of transposing upon the lines here laid down developes the "mental ear," quickens the musical perception and gives ease in sight-reading; as it is evident that, if the student can *transpose* at sight, he will not have much difficulty in merely *playing* at sight. The author has made free use of the tonic sol-fa as well as the old notation in his many musical examples.

MUSICAL ANALYSIS. A Handbook for Students. By H. C. BANISTER. With Musical Illustrations. Crown 8vo, limp cloth, 2s.

This series of Papers has not been intended as a Treatise on its boundless subject; only illustrative of the way in which students may go to work in the interesting process of Analysis. To work at it is much more interesting and improving than to read Analysis already made for them. The student should look out for beauties, even of the simpler kind, as well as endeavour to solve recondite problems. Try and enjoy the landscape and not merely map out the country.

"This neatly-got-up volume is indispensable to all students of music. It is at once thorough and popular, scientific and interesting, and whilst most instructive, it is charmingly luminous."—*Gentleman's Journal.*

THE ART OF MODULATING. A Series of Papers on Modulating at the Pianoforte. By Henry C. Banister. With 62 Musical Examples. Crown 8vo, limp cloth, 2s.

Moreover in writing a composition there is time to think, devise and contrive; but that which is the subject of the above work is promptness, readiness, and quick thought under special circumstances.

Not only at examinations—*viva voce*—but in actual experience, is ability required to pass rapidly with very little "process" from one key to another.

"A great portion of the book is taken up with analyses of the modulations employed by the great composers in their most significant works—these are always scholarly and ingenious and certainly show how by practice wedded to adequate knowledge it may be possible to pass rapidly with very little of what the writer calls 'process' from one key to another."—*London Musical Courier.*

THE STUDENT'S BOOK OF CHORDS. By Pascal Needham. Crown 8vo, sewed, 6d.

The Author says:—A very large number of music students, executive and theoretical, have expressed to me from time to time a desire for a cheap book, in which the chords with their inversions and resolutions are briefly and clearly explained. To these students I dedicate this work.

A FIRST BOOK OF MUSIC FOR BEGINNERS, Embodying Recent English and Continental Teaching. By Alfred Whittingham. Sixth Thousand. Crown 8vo, sewed, 2d.

The two principal objects kept in view in writing this little book were Thoroughness of Definition and Regular Order in the arrangement of Subjects. It differs from all other similar works in that all the technical terms in music are introduced in the Answers not in the Questions.

VIOLIN.

THE VIOLIN AND OLD VIOLIN MAKERS. Being a Historical and Biographical Account of the Violin. By A. MASON CLARKE. With Facsimiles of Labels used by Old Masters and illustrations of a copy of a Gasparo da Salo. Crown 8vo, cloth, 2s. net (paper, 1s. net).

The Author in his Preface says: "I set to work with the object of presenting in a concise form such information as I have thought necessary, or at least of interest to every one who elects to take up the violin, either as an object of recreation or serious study. In order to facilitate my labours, I have consulted the leading British and foreign authorities on the violin and kindred instruments. I have also during many years devoted much time to the inspection and study of genuine old instruments."

CONTENTS: Part I.—Historical. 1. Introductory and Early English. 2. Italy. 3. France. 4. Germany. Part II.—Biographical Violin Makers of the Old School. 1. Italian, with Labels. 2. German and Tyrolese, with Labels. 3. French, with Labels. 4. British, with Label. Part III.—On the Development of Classical Music for the Violin and other Stringed Instruments.

THE ART OF HOLDING THE VIOLIN AND BOW AS EXEMPLIFIED BY OLE BULL. His Pose and Method proved to be based on true Anatomical Principles. By A. B. CROSBY, *M.D., Professor of Anatomy.* Portrait, Diagrams and Illustrations. 8vo, cloth, 2s. (paper, 1s.)

Included in the above are some interesting recollections and anecdotes of Ole Bull.

THE VIOLIN AND STRING WORLD. Monthly (in Continuation of "The Violin Times.") With Portrait Supplements. Annual Subscription 2s. 6d. (Abroad 3s.)

THE PRECURSORS OF THE VIOLIN FAMILY. Archæological Researches and Studies. By KATHLEEN SCHLESINGER. With over 200 Illustrations and Plates, a Bibliography of Music and Archæology and Indices to the Two Volumes. Forming Vol. II of "The Instruments of the Modern Orchestra and Early Records of the Precursors of the Violin Family." 8vo, cloth. *Ready in* 1910.

SKETCHES OF GREAT VIOLINISTS AND GREAT PIANISTS. See "Biographical Section."

LIFE OF STRADIVARIUS. See "Biographical Section."

BIOGRAPHICAL DICTIONARY OF FIDDLERS. See "Biographical Section."

TECHNICS OF VIOLIN PLAYING. By Karl Courvoisier. With Illustrations. Tenth Edition. Cloth, 2s. 6d. (paper, 1s.)

"It is my opinion that this book will offer material aid to all violin players."—Joachim.

"As far as words, aided by diagrams, can make clear so practical a subject as the playing of a musical instrument, this little book leaves nothing to be desired. The author, who was a pupil of Joachim, has treated the subject in a most thorough manner, and we can highly recommend his little book."—*Educational Times.*

"Illustrated in the clearest possible manner, by really admirable drawings."—*Graphic.*

"Courvoisier, a pupil of Joachim, has aimed at presenting an exposition of the methods of that great master, in which attempt he has, according to Herr Joachim's own explicit declaration, been very successful."—*Scotsman.*

"A most thorough exposition of everything connected with this difficult instrument."—*Schoolmaster.*

TREATISE ON THE STRUCTURE AND PRESERVATION OF THE VIOLIN and all other Bow Instruments. Together with an Account of the most Celebrated Makers and of the Genuine Characteristics of their Instruments. By J. A. Otto, with Additions by J. Bishop. With Diagrams and Plates. Fourth Edition, further Enlarged. Crown 8vo, cloth, 3s.

Contains instructions for the repair, preservation and bringing out the tone of instruments; tracing model for violin, mutes and fiddle holders; list of classical works for stringed instruments. This work is especially valuable for makers of violins.

HOW TO PLAY THE FIDDLE. For Beginners on the Violin. By H. W. and G. Gresswell. Eighth Edition. Crown 8vo, cloth, 2s. (paper, 1s.)

Joachim says:—"Contains many useful hints about violin playing."

Contents:—General and Introductory—On Teaching the Violin—On Instruction Books—On Practice—Relating to the Purchase of a Violin—Importance of Buying a Good One—How to Set about Securing a good Violin—The Merits of Old Fiddles, Age and Use—The Testing or Making Trial of a Fiddle—Preservation and Repair of Violins—General and Historical—Few Short Remarks of a General Character—Short History of Some Celebrated Violin Makers—The Sound Bar and the Sound Post—The Bridge—A Few Words on the Pegs, Mute, Resin and Fingerboard—The Strings—The Mode of Stringing—The Bow—Bowing—The Method of Tuning the Violin—Some Rules to be Observed in Playing—Double Stopping—Harmonics—Remarks on the Shift—The Shake—On Playing with an Accompaniment—Concluding Observations.

"We can cordially recommend this clever little work to all who are studying the violin."—*Graphic.*

FACTS ABOUT FIDDLES. Violins Old and New. By J. Broadhouse. Fourth Edition. Crown 8vo, sewed, 6d.

THE HISTORY OF THE VIOLIN and other Instruments Played on with the Bow from the Remotest Times to the Present. Also an Account of the Principal Makers, English and Foreign. With Coloured Frontispiece and numerous Full-page Illustrations and Cuts. By WILLIAM SANDYS, F.S.A., and SIMON ANDREW FORSTER. 390 pages, 8vo, cloth, 7s. 6d. net (published at 14s.)

THE VIOLIN, Its History and Construction. Illustrated and Described from all Sources. Together with a List of Tyrolese and Italian Makers. With Twenty-nine Illustrations and Folding Example of the First Music Issued for the Lute, Viol and Voice. From the German. of ABELE and NIEDERHEITMAN. By JOHN BROADHOUSE. Crown 8vo, cloth, 2s.

"The learned and instructive treatise of Abele, skilfully rendered by J. Broadhouse and supplemented by a version of Niederheitmann's list of Italian and Tyrolese violin makers, a compilation invaluable to collectors and connoisseurs of rare fiddles * * * a work which forms a noteworthy addition to the small number of English books upon this interesting subject."—*Scotsman.*

The importance of this work has been long recognised on the Continent, where it is eagerly sought for at a high price. The above is a full translation, special attention has been given to a proper rendering of technical portions.

INFORMATION FOR PLAYERS, Owners, Dealers and Makers of Bow Instruments, Also for String Manufacturers. Taken from Personal Experiences, Studies and Observations. By WILLIAM HEPWORTH. With Illustrations of Stainer and Guarnerius Violins and Guage of Millimetres and Centimetres, etc. Crown 8vo, cloth, 2s. 6d.

CONTENTS:—The Pegs—Neck—Fingerboard—Bridge—Tail-Piece—Saddle—Violin Holder—Tail-pin—Bar—Sound Post—On the Stringing of Bow Instruments in General Use—Strings—Rosin—Cleaning of the Instrument and the Bridge—Bow—Violin Case—Repairs—Preservation—Conclusion.

HOW TO MAKE A VIOLIN, Practically Treated. By J. BROADHOUSE. New and Revised Edition. With 47 Illustrations and Folding Plates and many Diagrams, Figures, etc. Crown 8vo, bevelled cloth, 3s. 6d.

CONTENTS:—Introduction—The Parts of the Violin—On the Selection of Wood—The Tools Required—The Models—The Mould—The Side-pieces and Side Linings—The Back—Of the Belly—The Thickness of the Back and Belly—The Bass Bar—The Purfling—The Neck—The Finger-Board—The Nut and String Guard—Varnishing and Polishing—Varnishes and Colouring Matter—The Varnish—A Mathematical Method of Constructing the Outline—The Remaining Accessories of the Violin.

This new edition has had the advantage of being revised throughout by a celebrated violin maker.

VIOLIN MANUFACTURE IN ITALY and its German Origin. By Dr. E. Schebek. Translated by W. E. Lawson. Second Edition. Square 12mo, sewed, 1s.

HOW TO REPAIR VIOLINS and other Musical Instruments. By Alfred F. Common. With Diagrams. Crown 8vo, cloth, 2s. (paper, 1s.)

VOCAL.

PHYSICAL DEVELOPMENT IN RELATION TO PERFECT VOICE PRODUCTION. By H. Travers Adams, B.A. 8vo, sewed, 2s. net.

This work is especially intended for students and is divided into sections, such as Vibration, Breaks and Registers, The Speaking Voice, Attack, Practical Application, Breathing, Inspiration, Final Exercise in Inspiration, Expiration, Active or Forced Inspiration, Completion of Breathing, Practice of Sounds, Placing, Classification of Voices.

OBSERVATIONS ON THE FLORID SONG. Or Sentiments on the Ancient and Modern Singers. By P. F. Tosi. Translated by Mr. Galliard. With folding Musical Examples. 184 pages. A Reprint of this Celebrated Book, first published in 1743. Crown 8vo, boards with vellum-like back, price 5s. (pub. 10s).

Recommended to all Students of the Italian Method of Singing by the late Charles Lunn.

"The readers of the *Etude* have frequently been treated to quotations from this remarkable work. To the teacher and student of singing it has a peculiar message. It stands for all that is sound and final in the philosophy of singing and shows that the æsthetics and morals of the art are changeless. Those who need a healthful mental stimulus should read this reprint of a work that represents the best thought and practice of the old Italian singers and singing masters."—*The Etude.*

"It is a practical treatise on singing in which the aged teacher embodies his own experience and that of his contemporaries at a time when the art was probably more thoroughly taught than it has ever been since. Many of its remarks would still be highly useful."—*Grove's Dictionary of Music and Musicians.*

Les principes de l'ancienne et belle école du chant italien sont exposés dans cet ouvrage avec Clarté et sont accompagnés d'observations qui démontrent que Tosi fut un grand maître dans cet art. Galliard a donné une traduction anglaise de ce livre accompagne de notes, à laquelle Burney accorde des Eloges, et que Hawkins critique amèrement.—*Fetis, Biographie des Musiciens.*

"The treatise of Tosi is altogether practical and contains a great number of particulars respecting the management of the voice, and the method of singing with grace and eloquence. Moreover it contains short memoirs and general characters of the most celebrated singers, male and female, of the author's time. Tosi was not only a very fine singer, etc."—*Dictionary of Musicians, 1827.*

CATECHISM OF PART SINGING. And the Choral Services. By John Hiles. Third Edition. Thick post 8vo, sewed, price 1s.

Advice to singers on every point of interest in reference to the vocal organs.

VOCAL EXERCISES FOR CHOIRS AND SCHOOLS. By Dr. Westbrook. Post 8vo, sewed, 2d.

TWELVE LESSONS ON BREATHING AND BREATH CONTROL. For Singers, Speakers and Teachers. By Geo. E. Thorp. Crown 8vo, limp cloth, 1s.

TWENTY LESSONS ON THE DEVELOPMENT OF THE VOICE. For Singers, Speakers and Teachers. By Geo. E. Thorp. Crown 8vo, limp cloth, 1s.

Mr. Thorp's two books have from time to time been recommended by various eminent vocal specialists as giving practical aid and advice for the training, care and development of the voice. They are free from any *biased "system" or "discovery."*

TREATISE ON THE TRAINING OF BOY'S VOICES. With Examples and Exercises and Chapters on Choir-Organization. Compiled for the Use of Choirmasters. By George T. Fleming. Crown 8vo, cloth, 2s.

GRADUATED COURSE OF EXERCISES FOR BOY CHORISTERS. With Pianoforte Accompaniment. For Use in Conjunction with Above. By G. T. Fleming. 4to, album, sewed, 1s.

——— *Ditto*, Boy's Voice Part only, 6d.

50 MUSICAL HINTS TO CLERGYMEN. Management of Breath, Classification of Male Voices, Management of the Voice, The Service. With twenty specially written Exercises. By Geo. F. Grover. Crown 8vo, sewed, 1s.

SOME FAMOUS SONGS. An Art Historical Sketch. By F. R. Ritter. 8vo, sewed, 1s.

HOW TO MANAGE A CHORAL SOCIETY. By N. Kilburn, Mus. Bac. Third Edition, Revised. Crown 8vo, sewed, 6d.

HOW TO SING AN ENGLISH BALLAD. By E. Philp, Seventh Edition. Crown 8vo, sewed, 6d.

"It would be difficult to find a casket of brighter gems than those which lie within the cover of this little work."—*Illustrated London News.*

RUDIMENTS OF VOCAL MUSIC. With 42 Preparatory Exercises, Rounds and Songs in the Treble Clef. By T. Mee Pattison. Second Edition. Post 8vo, sewed, 4d.

VOICE PRODUCTION AND VOWEL ENUNCIATION. By F. F. Mewburn Levien. Diagrams by Arthur C. Behrend. Post 8vo, sewed, 6d.

WAGNER.

JUDAISM IN MUSIC (Das Judenthum in der Musik). Being the Original Essay together with the Later Supplement. By RICHARD WAGNER. Translated from the German and Furnished with Explanatory Notes and Introduction. By E. EVANS, *Senior.*

CONTENTS: Part I.—THE ORIGINAL ESSAY OF 1850. Chapter I. INTRODUCTORY. The Question introduced. Limitation to Art-Matters. Liberal tendency of modern thought. Its effects. The Jew's introduction to Art. The oppressions of Judaism. Chapter II. CHARACTERISTICS. The Jew's characteristics generally. His exterior. His speech. His artistic incapacities. His mannerisms. His vocal attempts. Chapter III. ART-RELATIONS. Plastic art. The ennoblement of money. Origin disdained. The true poet. The Jewish musician. Absolute music and its Jewish imitation. The Folk-spirit. Chapter IV. MUSICAL CREATION. No Jewish art. Only source of inspiration. Music in the Synagogue. Our Folk-song unavailable. The inner life of our music. The Jewish composer. Chapter V. MENDELSSOHN. Endowments. Bearing of his case upon the subject. Characteristics of his music. The language of Bach. The language of Beethoven. Resumé. Chapter VI. MEYERBEER. General view. Summary of his case. Its relation to our present art-life. Reasons for Jewish appearance in the field of music. EPILOGUE. The Poet Heine and Börne the Author. Part II. THE SUPPLEMENT OF 1869. BEING AN ACCOUNT OF EVENTS SUBSEQUENT TO THE ORIGINAL PUBLICATION. Chapter VII. THE OPENING PHASE OF HOSTILITIES. Tribute to Franz Brendel. The pseudonym of K. Freigedank. The enemy's forces arrayed. The tactics employed. Developments in the Press. Nicknames. Dr. Hanslick on the "Beautiful in Music." His appearance as musical critic. Chapter VIII. THE LISZT PHASE. The new party and Franz Liszt. "Zukunftsmusiker." Secrecy of the enemy's tactics. Liszt's persecution in the Press. Chapter IX. THE THEATRES. Experiences in France, England and Russia. Difficulties created for the later operas. Specialities in hostility. Chapter X. THE NEW ÆSTHETES. Feebleness of the present art-spirit. Lethargy of the new Æsthetes. Their negative zeal. The position of the German composer. Chapter XI. SCHUMANN AND BRENDEL. First impulses. Leading musical characteristic of the period. Robert Schumann. His conversion. First impulses revived by Franz Brendel. Chapter XII. APOSTROPHE. The triumph of Judaism. The present position. Impediments to a closer friendship. Aspirations. Conclusion. Note (On the Author's subsequent view).

BAYREUTH AND MUNICH. A Travelling Record of German Operatic Art. By VERNON BLACKBURN. Crown 8vo, stiff boards, 1s. net.

1. The Philosophy of "Parsifal." 2. Back to a busy World. 3. Munich the Moderate. 4. "Die Zauberflöte." 5. Wagner plus Mozart. 6. A Digression. 7. Back to Bayreuth. 8. Finally Munich: from Two Aspects.

THREE IMPRESSIONS OF BAYREUTH. The 1908 and Previous Wagner Festivals. By ROSE KOENIG. With Two Facsimile Programmes. Crown 8vo, cloth, 2s. net (paper, 1s. net).

"Entertaining and agreeable reading, as recording the impressions of a musical and susceptible hearer."—*Yorkshire Post.*

HOW TO UNDERSTAND WAGNER'S "RING OF THE NIBELUNG." Being the Story and a Descriptive Analysis of the "Rheingold," the "Valkyr," "Siegfried" and the "Dusk of the Gods." With a number of Musical Examples. By GUSTAVE KOBBE. Sixth Edition. Post 8vo, bevelled cloth, gilt top, 3s. 6d.

To be appreciated in the smallest way Wagner must be studied in advance.

WAGNER. "Der Ring des Nibelungen." Being the story concisely told of "Das Rheingold," "Die Walküre," "Siegfried" and "Götterdämmerung." By N. KILBURN. Crown 8vo, sewed, 9d. net.

WAGNER. A Sketch of his Life and Works. By N. KILBURN. Sewed, 6d.

WAGNER'S "PARSIFAL." And the Bayreuth Fest-Spielhaus. By N. KILBURN. Crown 8vo, sewed, 6d.

BEETHOVEN. By RICHARD WAGNER. See "Biographical" tral Section."

ON CONDUCTING. By RICHARD WAGNER. See "Orchestral" Section.

WAGNER. See "Makers of Music." ("Biographical Sect.")
,, See "Mezzotints in Modern Music." (Æsthetics, etc., Section.)

MANUSCRIPT MUSIC PAPER.

(*a*) 12 Staves. Roy. 8vo (10 by 6½). Ruled even (120 sheets), the lot 2s. 6d.

This is pre-eminently the Musical Students' Paper, as it is light, portable, smooth and easy to write upon; each sheet, too, will hold a large quantity of matter. There is no paper better suited for Exercises on Counterpoint and Harmony.

(*b*) 12 Staves. Oblong folio (14 by 10). Ruled in groups of 3 Staves for Organ Music. 5 quires (120 sheets), the lot 5s.

The paper is of the same size as ordinary oblong folio, Organ Music, *e.g.*, Best's Arrangements, etc.

(*c*) 12 Staves. Folio music size ruled in threes (10 by 14). 5 quires (120 sheets), the lot, 5s.

Exactly the same in size as ordinary folio printed music so that upon it Songs or Organ Pieces may be written just as they are to be printed. It is a very useful paper, as Manuscript music written on it can be bound with Printed Music.

(*d*) 12 Staves. Quarto size (11¾ by 9¼). 5 quires (120 sheets), the lot, 3s. 6d.

(*e*) 12 Staves. Oblong quarto (9¼ by 11¾). 5 quires (120 sheets), the lot 3s. 6d.

(*f*) 12 Staves. Folio music size, ruled even (10 by 14). 5 quires (120 sheets), the lot 5s.

(*g*) 12 Staves. Folio music size, full score, 24 staves (10 by 14). 5 quires (120 sheets), the lot 5s.

(*h*) 14 Staves. Quarto size (11¾ by 9¼). 5 quires (120 sheets), the lot 3s. 6d.

CHOIR ATTENDANCE REGISTER.

No. 1. Ruled for a Choir of 20 or less for One Year, beginning at any date. 1s. 6d.

No. 2. Ruled for a Choir of 40 or less, for One Year, beginning at any date. 2s.

No. 3. Ruled for a Choir of 60 or less, for One Year, beginning at any date. 2s. 6d.

CHOIR LISTS FOR SUNDAY SERVICES.

No. 1. Morn. and Even. Printed in Red. 1s. 4d. per 100.

No. 2. Morning, Afternoon and Evening. Printed in Red. 1s. 6d. per 100.

No. 3. Morning and Evening. Printed in Red and Black. 1s. 8d. per 100.

No. 4. Morn. and Even. Printed in Red. 1s. 4d. per 100.